

MacWEEK

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THE NEWSWEEKLY FOR MACINTOSH MANAGERS

IN REVIEWS

- ✓ **Aldus Fetch**
Media cataloger supports workgroups
- ✓ **Public Utilities for the Mac**
Disk-utility contender has minor flaws
- ✓ **Storm PicturePress**
The leading choice for JPEG compression

See Page 41

Apple slow to go global with WorldScript tools

By Neil McManus

Cupertino, Calif. — The demolition of the Tower of Babel has been postponed.

WorldScript, a feature of System 7.1, promises to let users work with multiple writing systems without switching system software. But it requires extensions that are not included in U.S. versions of the new system release, as well as an Apple-developed software module for each supported language.

Although Apple is preparing for a March release of the Japanese WorldScript language module in the United States, it reportedly has no distribution plans for the files required to support other languages with its new multilingual system software.

CD-ROM discs Apple has released to developers include the two extensions as well as language modules for Russian, Arabic, Hebrew, Thai, traditional Chinese, simplified

Chinese, Japanese, Korean, Polish, Hungarian and Czech. However, developers are not permitted to distribute the modules to end users.

Apple's Japanese WorldScript package reportedly will include the language module, the extensions, two Japanese TrueType fonts and documentation.

Programs have to be rewritten to support the new technology. WordPerfect Corp. of Orem, Utah and Nisus Software Inc. of Solana Beach, Calif., (see story, Page 4) have announced WorldScript-ready word processors.

"There's a real pent-up demand for these modules, and we would love to distribute them to our customers," said Edwina Riblet, marketing director at Nisus. "It seems senseless for Apple to develop these tools and not make them available."

Others agreed. "Apple's approach to WorldScript is like selling us a

See WorldScript, Page 107



SCOTT BALDWIN

Shiva to Cayman: FastPath on course for future updates

By April Streeter

Cambridge, Mass. — Reports that Shiva Corp. is dropping its FastPath routers have been greatly exaggerated, the company said last week.

Rival Cayman Systems Inc. had indicated in advertisements in recent issues of MacWEEK that Shiva is planning to exit the router business.

Moving to counter the ad, Shiva spelled out plans for upgrades to the FastPath LocalTalk-to-Ethernet router, as well as for new servers that will support users dialing in over a variety of protocols, via high-speed digital phone lines and/or from mobile devices (see story, Page 107).

The Cayman ad stated that Shiva's flagship router, the FastPath 5, would soon be "retired." In the ad, Cayman capitalized on Shiva President Dan Schwinn's recent statements that his company was focusing on remote-access products, by offering a \$1,500 trade-in to users ready to switch from a FastPath to a Cayman GatorBox or GatorStar.

See Shiva, Page 107

Express Modem lags in reaching Duo users

Apple says card ships in limited quantities

By Nathalie Welch

Cupertino, Calif. — Three months after the first PowerBook Duos shipped, early adopters of Apple's newest notebooks still find themselves up the creek without an internal modem.

When Apple introduced the modular notebook system in October, it said it would deliver a Duo

version of the Express Modem, its new internal fax modem, in December. The company now claims the \$319 card has been shipping in limited quantities for two weeks, but few if any units have reached dealers or users. And no third-party modem makers have released or even announced internal models for the Duos — in part, several developers said, because Apple has not provided the necessary documentation.

Dave Rothschild, PowerBook product-line manager, acknowl-

See Express Modem, Page 108

Review

Duos suitable for weight watchers but carry burden of untested design



The Duo 230 is the lead Macintosh in Apple's modular PowerBook line. While it is an innovative machine, its reliability and the availability of docks will be key questions for users looking for a mobile Mac in the coming months.

ED CALDWELL

By Rick LePage

Although Apple has been shipping the Macintosh PowerBook Duo 210 and 230 since late October, only recently has the Duos' key peripheral — the Macintosh Duo Dock — become available. Other docking mechanisms will be shipping in the coming months, but the Duo Dock is the one that gives the highly portable Duo all the characteristics of a desktop Mac.

The effectiveness of this duality will be critical for users comparing the Duos with all-in-one Power-

Books such as the PowerBook 160 and 180.

The Duo system represents a new approach to portable computing for Apple, one that promises to offer the ideal Macintosh: a lightweight, powerful mobile computer that can perform as a full-function machine on the desktop. While we can appreciate the innovation in the Duo and the Duo Dock, there are still a number of missing pieces and reliability questions that make us hesitate from qualifying the Duo a success.

See Duos, Page 45

General Magic to conjure partners in NY debut

MagicMail, Telescript in PDAs, AT&T net

By Mitch Ratcliffe

Mountain View, Calif. — General Magic Inc., one of Silicon Valley's best-kept secrets, will appear in a puff of partnerships during an off-Broadway media event in New York next month. Sources said the company's technology promises a unified communications architecture for mobile computer users.

General Magic, based here, will

be joined by AT&T Co., Motorola Inc., Sony Corp., Philips N.V. and Matsushita Electric Industrial Co. in announcing the outlines of two core technologies, an electronic-mail interface called MagicMail and a set of communications protocols known as Telescript. Apple also will participate in the announcement, despite recent friction between the two companies.

Due in 1994, these technologies will provide intelligent electronic messaging of multiple data types. Potential applications reportedly will include wireless E-mail and

delivery of information services over telephone lines.

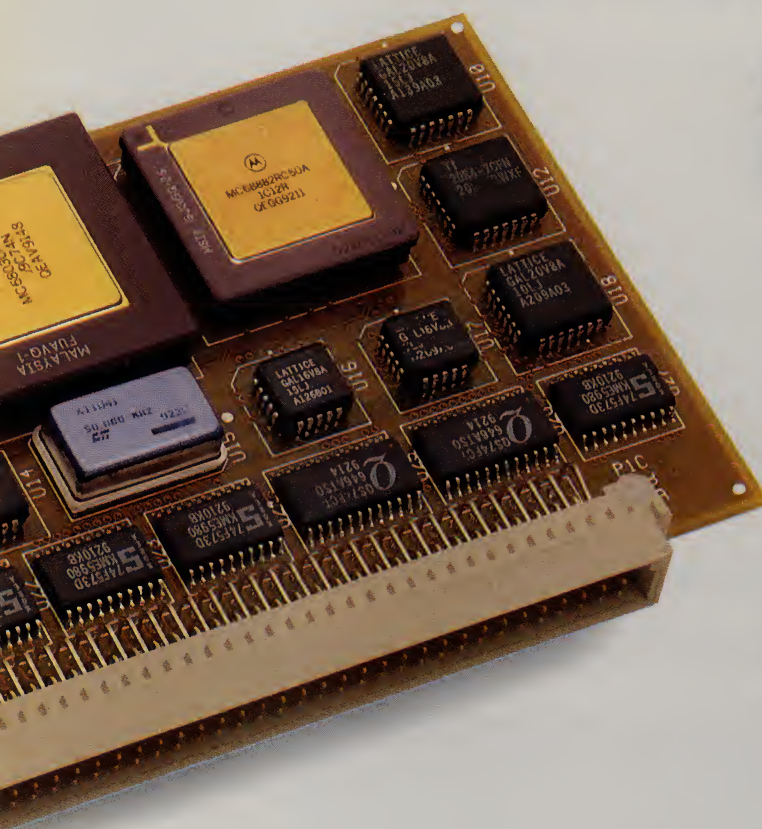
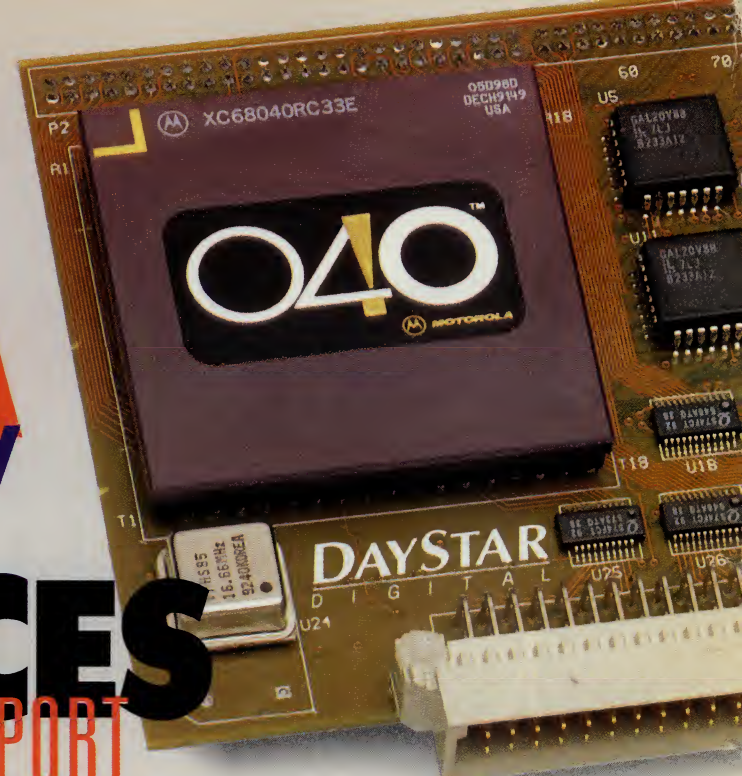
AT&T, an investor in General Magic, will support MagicMail clients and Telescript protocols through its EasyLink global E-mail service. The telephone company also plans to use Telescript as a foundation for information service providers who want to sell their wares over the phone network and as a basis for a future version of EasyLink.

EO reportedly will offer a MagicMail interface to the EasyLink client software built into its Personal Communicators, which are slated to ship this summer under both EO and AT&T labels. Eventually, some Newton devices also may come bundled with MagicMail.

MagicMail and Telescript also will drive a stand-alone communi-

See General Magic, Page 107

1993 POWER Acceleration performance LOWER PRICES the need for speed



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Taligent moves up ship dates, may offer components in '93

Full operating system expected to ship in '95

By Andrew Gore

Cupertino, Calif. — With only a month left before its first anniversary, Taligent Inc. is ahead of schedule and may deliver the first pieces of its object-oriented operating system this year, according to officials at the Apple-IBM Corp. joint venture.

The full Taligent environment is still not expected to ship until 1995, but Rick Berzle, Taligent vice president of marketing, said the project is moving along well and some object components could ship to developers this year.

"We are making progress toward getting the full native system out earlier than originally planned," Berzle said. In the past year, he said, Taligent has moved into its own headquarters; finalized a business plan that covers marketing, potential competitors and revenue projections; and hired an additional 100 employees.

► **Components.** IBM recently announced that it will license Taligent components, low-level class

libraries, for OS/2 and AIX. Chris Espinosa, Apple's Taligent business manager, said Apple also plans to license components, which it will add to the Mac OS and PowerOpen.

According to Espinosa, there are two advantages to using components. They will allow Apple to add functionality to its operating systems much more quickly. They also will smooth the transition from current operating systems when Apple's Enterprise Systems Division starts shipping Taligent-based computers. Espinosa said there are no plans to replace System 7 with Taligent.

► **Native OS.** While Apple is gearing Taligent toward the corporate IS market, IBM apparently wants to use the OS as a general-purpose computing platform, meaning that at some point IBM will be using technology that originated at Apple to compete directly with Apple.

Espinosa acknowledged this but said, "We will have System 7 [with support for] Taligent technology to compete back."

Berzle said Personalities, special modules that allow Mac OS and OS/2 applications to run unaltered in the Taligent OS, probably won't be available with the first release of the OS. □

Coactive to link Mac, DOS peers on net

By April Streeter

Indian Wells, Calif. — Plug-and-play network connectivity is not just for the Macintosh anymore.

At next week's Demo '93 conference here, Coactive Computing Corp. reportedly will unveil hardware and software products that allow desktop computers running Microsoft Corp.'s DOS or Windows to be grouped together with their Mac counterparts in peer-to-peer networks of up to 32 devices.

According to sources, Coactive also is working on providing network connectivity for forthcoming handheld devices such as the Personal Communicators from EO Inc. of Mountain View, Calif.

On the Mac, a \$29 connector and software extension will be all that is required to form a peer-to-peer network with DOS, Windows or handheld computers. Windows or DOS workstations will need a \$149 bundle consisting of a DOS version of the AppleTalk stack and a hardware adapter that includes a 32-bit microprocessor and plugs into the serial port to provide LocalTalk emulation.

Coactive worked with Farallon Computing Inc. of Alameda, Calif.,

to develop portions of the software, which is designed to require just 60 Kbytes of disk space, sources said.

Coactive declined to comment. Coactive Computing Corp. is at 1301 Shoreway Road, No. 221, Belmont, Calif. 94002. Phone (415) 802-1080; fax (415) 593-9304. □

Apple rolls back prices on printers, scanner

Cupertino, Calif. — In the wake of its imaging-products rollout this month, Apple has reduced prices on several printers and a scanner by up to 41 percent.

The 300-dpi LaserWriter IIg, based on a 25-MHz 68030 chip with an Ethernet interface, fell 41 percent, to \$2,309 from \$3,909. The 300-dpi LaserWriter IIx, which is based on a 20-MHz '030, was reduced by 38 percent, to \$1,869 from \$2,999.

The Personal LaserWriter NTR, a 300-dpi, RISC-based printer, fell 17 percent, to \$1,649 from \$1,989. The Apple OneScanner, a flatbed gray-scale device, was cut 19 percent, to \$949 from \$1,179. □

News

- 4 **MapInfo puts Version 2.0 of namesake on the map**
Upgrade supports optional scripting language, enhanced database functions.
- 6 **TeamAgenda lets workgroups arrange schedules**
MacVONK ships multi-user package.

Gateways

- 18 **Cisco divides to conquer**
New router puts switching and route management on separate processor cards.
- 18 **Securing the network**
usrEZ to ship new network encryption software.



- 22 **Internet becoming information clearinghouse**
On-line data providers are offering their services on the ever-expanding Internet.

GA

- 28 **DiVA in production with new suite of video tools**
Five new software products to cover low, high ends.
- 28 **Nikon scales down price of slide scanning**
Based on new LED technology, compact color CoolScan handles 35mm input for less than \$2,200.

BusinessWatch

- 34 **Apple, IBM results a show in contrasts**
IBM posts largest quarterly loss, while Apple continues to see sales grow.
- 34 **Mac crime bites Big Apple**
Users in New York and other big cities report an increase in Mac robberies.



Opinion

- 38 **Editorial**
Missing modems big problem for Duos.
- 38 **Commentary/Jean-Louis Gassée**
Apple's OS shuffle is dangerous but necessary.
- 39 **Letters**
Dear Mr. Sculley: Where's my Mac?
- 39 **Mac Manager/Don Crabb**
Learning from Apple's supply woes.

Reviews

- 41 **Fetch retrieves files with ease**
Aldus' new media cataloger supports many file formats and offers powerful finds.
- 41 **Fifth Generation powers up Public Utilities**
Data-recovery release finds and fixes a wide array of problems but shows some first-release glitches.
- 42 **TechWorks takes notes on Spiral**
Despite a marred interface, application offers an innovative approach to note taking.
- 44 **PicturePress 2.5 puts squeeze on images**
Storm Technology's upgrade to JPEG compressor adds CMYK support, enhancements for image processors.

ProductWatch



- 49 **Nailing down architectural CAD products**
Users should build a good understanding of CAD before making a purchase in this growing field.
- 52 **MacInTouch/Ric Ford**
System 7.1 wasn't the end of Omega SANE.
- 52 **Ask David Ramsey**
Putting the right AppleTalk in ARA.

Mac the Knife

- 110 **Mulling the mystery and the magic of Microsoft**
Move over Newton, here comes MS-PDA?
- 54 **Ad Showcase** 106 **Careers**
- 56 **Mail Order** 108 **Advertiser Index**
- 88 **Classified** 109 **Product Index**

MapInfo adds scripting language

Upgrade enhances database functions

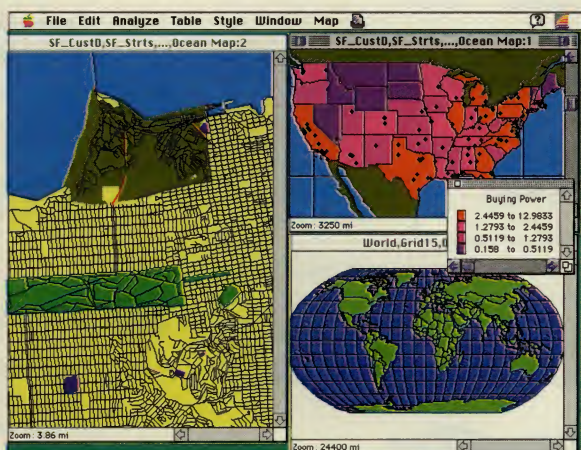
By Raines Cohen

Troy, N.Y. — MapInfo Corp. this week will ship an update to its namesake desktop mapping application that brings the Mac version up to par with its Windows, Hewlett-Packard and Sun siblings.

MapInfo 2.0 adds support for an optional scripting language, enhanced database functions and interface improvements.

The new Mac version, announced last summer (see MacWEEK, Aug. 10, 1992), is aimed at sales-planning, account-management, customer-service and marketing applications.

Although the program does not support publish and subscribe or Data Access Language queries, it does include its own SQL implementation and can operate directly on Microsoft Corp.'s FoxBASE and Excel 4.0, Lotus 1-2-3, and ASCII text files. Version 2.0 adds:



MapInfo 2.0 for the Mac supports multiple map projections and rotated text on maps.

► **Analysis features.** The program's SQL implementation has been extended to include geographical comparisons such as within, contains and intersects. For example, users could issue a query to find states adjacent to another one.

Also new is buffering, which lets users find items within a specified distance from an area or line.

"It's awesome," said Lisa Ballantyne, a partner at Integration Technologies Inc., a MapInfo value-

added reseller in Orange, Calif. "It becomes a true geographic tool with the new buffering and layout tools. Now we can pretty much go into a publishing mode."

► **Projections.** Seventeen different map-projection systems are now supported, including Mercator, Albers, Lambert and Robinson.

► **System 7 support.** The program now includes balloon help and is scriptable via Apple events, so scripting systems such as AppleScript and UserLand Software Inc.'s Frontier can perform queries and run MapBasic programs.

"Being able to use basically the same [MapBasic] code across platforms is terrific," Ballantyne said. "It's not as seamless as we'd like it to be, but at least we have the option now."

MapInfo 2.0 remains priced at \$995. Current users can upgrade for \$250. Site licenses and educational pricing are available.

The new version can read StreetInfo 2.0 files, street-level map data sold for \$225 per county. StreetInfo 1.0 users can upgrade for \$67.50 per county.

MapInfo Corp. is at 200 Broadway, Troy, N.Y. 12180. Phone (518) 274-6000 or (800) 327-8627; fax (518) 274-0510. □

MapBasic lets users build vertical apps

MapInfo 2.0 users can create custom environments tailored for vertical applications with an add-on sold by MapInfo Corp.

MapBasic, priced at \$795, is based on a structured implementation of the BASIC programming language. It can override the MapInfo menus and dialog boxes so end users can interact with an application in real-estate terminology, for example, rather than the desktop mapping terms used by MapInfo.

The language can include SQL queries on maps and data. A

"watch-me" mode lets users build query scripts automatically. A window in MapInfo displays MapBasic code so users can learn the language and execute simple MapBasic functions directly.

MapBasic can send Apple events to other applications and respond to Apple events sent by applications and scripting systems. The language can run HyperCard external commands.

Users can move MapBasic programs between platforms supported by MapInfo 2.0 without modification. — By Raines Cohen

Chassis lets Duo Dock users break two-card limit

By Raines Cohen

Austin, Texas — Duo users frustrated that Apple's Duo Dock has only two NuBus slots now have a place for their extra cards.

Second Wave Inc. this month shipped a new version of its four- and eight-slot NuBus expansion chassis that is compatible with the Duo Dock.

The Expanse NB4 and NB8, priced at \$1,295 and \$2,295, respectively, connect to the Duo Dock through a single NuBus card and cable.

Each includes its own beefy

power supplies (50 and 100 watts, respectively), cooling fan and room for a 3.5-inch half-height SCSI device.

Expanse NB4 measures 9.5 by 14 by 4 inches (smaller than a Mac IIx); the eight-slot version is 14.3 by 14 by 5.5 inches (about the size of a Mac IIvx).

All Second Wave products carry a one-year warranty.

Applications typically requiring multiple NuBus cards include multimedia development, data acquisition, industrial control, image processing and digital signal processing.

While Duo Dock users needing Ethernet network connectivity currently need to use up one of the two internal slots or resort to a slower external SCSI or serial device, a future version of the dock's logic board is expected to include an Ethernet port; its case has a pop-out panel adjacent to the SCSI port, suggesting an upgrade might be offered.

Second Wave Inc. is at 9430 Research Blvd., Echelon II, Suite 260, Austin, Texas 78759. Phone (512) 343-9661; fax (512) 343-9663. □

Nisus to allow multiple languages with WorldScript-ready upgrade

By Neil McManus

Solana Beach, Calif. — Nisus Software Inc. next month will release Nisus 3.4, a WorldScript-ready upgrade to the word processor.

Menus, dictionaries and tools in Nisus 3.4 will appear in the user's choice of a host of different languages. The upgrade will be sold in two versions:

► **Limited Flag Edition**, priced at \$395, operates under System 6.07 or higher in a variety of Roman-alphabet languages, including English, Spanish, French, German, Italian, Finnish, Portuguese and Spanish. It also works in Japanese under Apple's KanjiTalk operating system.

► **Complete Flag Edition**, priced at \$495, works in all the languages of the limited version plus Arabic, Chinese, Czech, Farsi, Hebrew, Hungarian, Korean, Polish, Russian and Thai. This version is copy-protected and requires System 7.0.1 or higher.

To work with kanji, Chinese and Korean under System 7.1, Nisus 3.4 users will require WorldScript language modules from Apple. The kanji module is expected to ship in the United States in March; Chinese and Korean modules have not been announced.

The Complete Flag Edition will come with the capability to work in

Roman-alphabet languages plus one additional non-Roman language. Users will be able to add an additional non-Roman language capability for \$45 per language. Both editions will come with an English dictionary and thesaurus, and one free foreign dictionary.

Nisus 3.4 will include a number of additional new features, such as tracking, a clock on the information bar, a Find Next Error command and the ability to justify text to tabs. Version 3.4 users also will be able to directly open PICT and Encapsulated PostScript files and edit user dictionaries as normal Nisus documents.

Upgrades to the Limited Flag Edition are \$20. Upgrade prices for the Complete Flag Edition are \$20 for users of version 3.24 or 3.26 and \$120 for users of all other versions.

Nisus Software Inc. is at 107 S. Cedros Ave., Solana Beach, Calif. 92075. Phone (619) 481-1477 or (800) 922-2993; fax (800) 481-6154. □



Nisus 3.4 will have a Gloss style that will allow text to be added above characters for writing between the lines.

PowerSwitch LT can control devices from AppleTalk nets

By Raines Cohen

San Francisco — Control electrical devices from an AppleTalk network? It's not only possible but practical for network management and light and appliance control with a device shipping this month from Radiant Enterprises Inc.

The \$199 PowerSwitch LT, announced last summer (see MacWEEK, July 27, 1992) includes a LocalTalk port so any Mac on a network or dialing in through AppleTalk Remote Access can control the electrical device plugged into it. A four-digit password prevents unauthorized control of the device.

An Apple Desktop Bus port on the device can sense the power-on key being pressed on an attached keyboard to turn on peripherals

plugged into a PowerSwitch when a Mac is turned on.

Several included programs can control the devices, including a configuration application, HyperCard externals and Chooser extension. The PowerSwitch can mimic a laser printer on the network, turning on the printer only when it is needed or when Macs on the network are in use.

The devices also can sense when a router has crashed and power-cycle it to bring the network back up, and turn on server Macs only when remote-access users dial in. The company also sells AppleTalk-equipped analog-to-digital converters.

Radiant Enterprises Inc. is at 1714 Stockton St., San Francisco, Calif. 94133. Phone (415) 296-8040; fax (415) 392-6860. □

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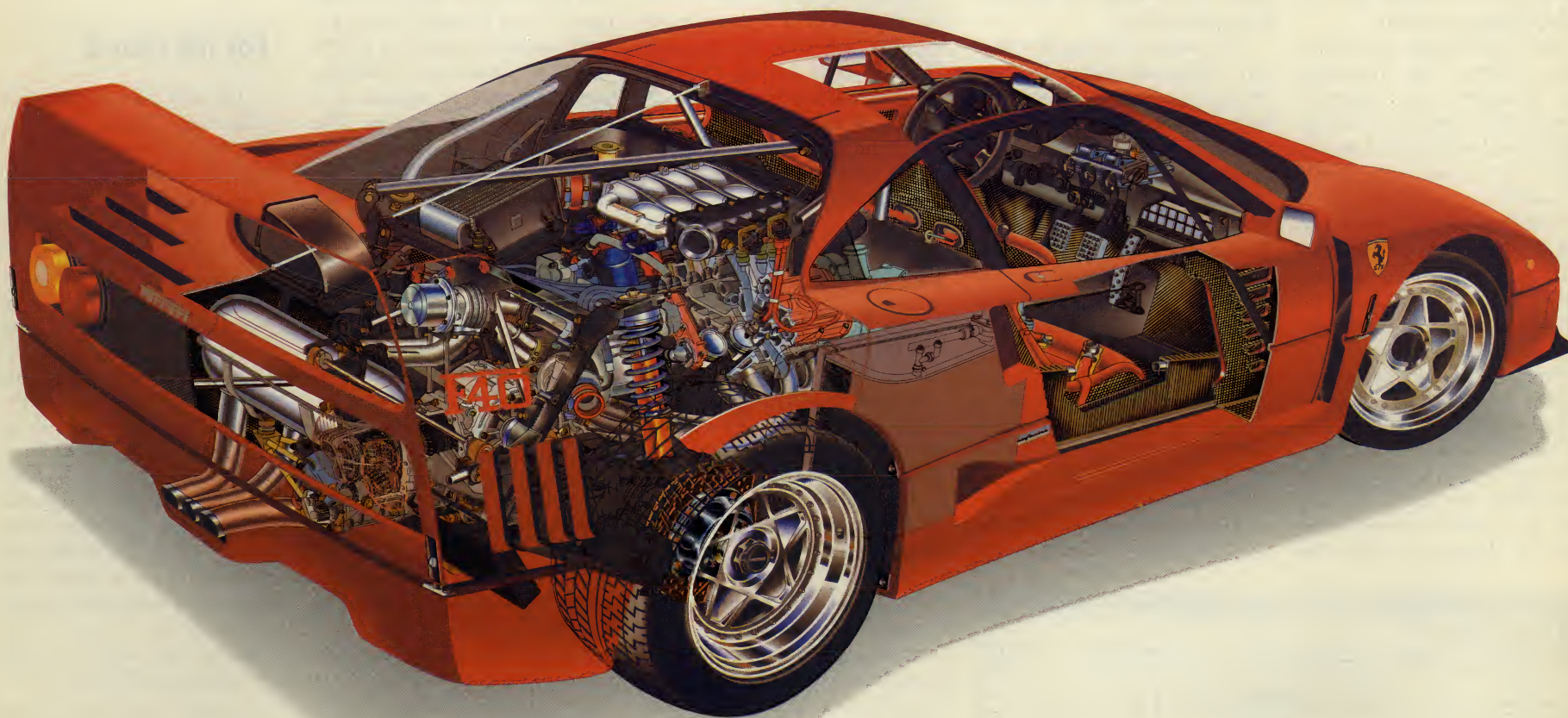
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Drawing Program to a MacWeek Target for Best Business Graphics Program to the Infoworld Buyers Assurance



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TeamAgenda keeps groups in line

By Matthew Rothenberg

Calgary, Alberta — MacVONK Inc. last month shipped TeamAgenda, a multi-user schedule-management package.

A client-server application, TeamAgenda lets up to 300 users view and modify personal and work-group schedules and resources. It uses the AppleTalk Data Stream Protocol and is compatible with AppleTalk Remote Access.

TeamAgenda provides a number of innovative network features. For example, when a TeamAgenda client, such as a PowerBook user, disconnects from the network, the server maintains a virtual image of the client's schedule on the server. When the user reconnects, the schedule is updated and conflicts are posted.

Depending on access privileges, a single user can open and manage the schedules of several TeamAgenda clients simultaneously. Users can



TeamAgenda's Commitment window lets users define access status of agenda items, apply color coding, and specify the duration and domain of activities.

assign privileges and password protection to their calendars, and activities can be dragged between calendars.

Users also can create domains to track activities or action items by project, customer or product.

The program costs \$99 for a single user and \$399 for a five-pack. Users of competing prod-

ucts can upgrade for \$59 per user.

TeamAgenda originally was announced in October 1991 by developer Team Coordination Software Inc. of Montreal.

MacVONK Inc. is at 940 Sixth Ave. S.W., Suite 1100, Calgary, Alberta T2P 3T1, Canada. Phone (403) 232-6545; fax (403) 232-6425. □

Storage Dimensions cuts prices, adds new Fast SCSI, DAT options

Wide SCSI drive, Quadra card ship

By Kirsten L. Parkinson

Milpitas, Calif. — Storage Dimensions Inc. last month shipped several new storage systems and cut prices on existing products by 10 percent to 20 percent.

► **Fast SCSI.** The company announced new Fast SCSI drives based on a 5.25-inch Seagate Elite-3 mechanism, which has a capacity of 2.8 Gbytes, a spindle speed of 5,400 rpm and an MTBF (mean time between failure) rating of 200,000 hours. Designed for use with Storage Dimensions' Fast SCSI Data Cannon adapters, the drives offer an average seek time of 11 seconds and sustained data transfer rates of 6.5 Mbytes per second, according to the company.

A single-drive external version lists for \$11,419; an internal model for the Quadra 900 or 950 costs \$10,579. A 5.6-Gbyte dual-enclosure configuration is \$22,334, and a four-drive enclosure with a total capacity of 11.2 Gbytes is \$44,209.

► **DAT.** The MacinStor Tape 400, a digital audio tape drive based on a 3.5-inch Hewlett-Packard Co. mechanism, is available for \$2,890. Hardware compression capabilities double capacity to upward of 4 Gbytes per 90-meter tape. The drive offers a sustained data transfer rate of 732 Kbytes per second and an average access time of 30 seconds

for data located anywhere on the tape. It ships with Dantz Development Corp.'s Retrospect Remote.

► **Wide SCSI.** The company began shipping the Mac market's first Wide SCSI systems, based on a 2.8-Gbyte Elite-3 drive and a new coprocessor card for the Quadras' processor direct slot (see MacWEEK, Nov. 9, 1992). Using a 16-bit Wide SCSI data path, in contrast to the eight-bit path of standard SCSI implementations, the system supports sustained transfer rates of 6.5 Mbytes per second and burst transfer at up to 16 Mbytes per second.

The external drive lists for \$12,124; a two drive, 5.6-Gbyte unit is \$23,599. The Data Cannon PDS/Quadra Wide SCSI-2 card is \$1,499.

► **Price cuts.** Reductions range across the Storage Dimensions line, including the recently released MacinStor SpeedArray Fast. Standard internal drives were cut by up to 13 percent.

Storage Dimensions Inc. is at 1656 McCarthy Blvd., Milpitas, Calif. 95035. Phone (408) 954-0710; fax (408) 944-1200. □

Dayna to put individual, server data in SafeDeposit

By Robert Hess and Henry Norr

Salt Lake City — Dayna Communications Inc. next month will release two "set-and-forget" backup utilities, one for personal use and one for AppleShare servers.

Called SafeDeposit and SafeDeposit Server, the programs were developed and originally announced by TerraNetics of Los Angeles (see MacWEEK, June 15, 1992). Dayna acquired the developer last fall.

► **SafeDeposit** automatically backs up selected files and folders to and from any mounted volume, including servers; it does not support tape. Depending on user settings, backups can be performed whenever a specified file or folder is modified, at preset times, on command, at shutdown, or when a specific disk is inserted.

Because SafeDeposit saves backup files in Finder format, users can restore missing items simply by dragging or have the

program restore individual files or entire volumes automatically. Users who have Fifth Generation Systems Inc.'s DiskDoubler can direct SafeDeposit to compress the backup copies.

The package consists of a standard application that walks users through the process of setting up their backup plan and a background application that carries out the backups.

► **SafeDeposit Server** operates in the background on AppleShare 2.x and 3.0 servers, providing full backups without downtime. The program preserves access-privilege information and can copy AppleShare's Users & Groups file and other items from the special Server folder. Administrators can set up custom backup plans by user and group.

For 120 days after their release, SafeDeposit and SafeDeposit Server will be available for \$99 and \$229, respectively; thereafter, list

prices will be \$189 and \$449, respectively. Dayna also will offer a variety of volume-pricing arrangements, including a \$1,495 pack with five copies of SafeDeposit Server and a \$3,999 package that includes one copy of the SafeDeposit Server and 100 copies of the workstation software.

Dayna Communications Inc. is at 50 S. Main St., Fifth Floor, Salt Lake City, Utah 84144. Phone (801) 531-0600; fax (801) 359-9135. □

Affinity gets up to Tempo II with System 7-savvy Plus 3.0

By Robert Hess

Boulder, Colo. — Affinity Microsystems Ltd. has brought its macro utility into the modern age.

Tempo II Plus 3.0, available now, is the first System 7-compatible version of the \$179.95 package.

With the help of a small background-only application, the Tempo extension will not only send and receive Apple events under System 7 but do so intelligently on the basis of its conditional-branching capabilities.

The program can, for example, test for the name of the current window, available disk space, whether a document or dialog includes specific text, or whether a particular application is running.

The new release also features a redesigned macro editor that dis-

plays every step in a macro in one view. Users can now script macros with the help of pop-up command lists instead of recording them.

A new Timer can trigger macros at a preset time or at regular intervals.

New externals can mount AppleShare servers and copy files, optionally replacing files based on their age.

Tempo II Plus MultiPaks range from \$675 for five users to \$4,500 for 50 users. Site licensing also is available.

Upgrades are \$30 for current Tempo II Plus owners, \$49 for Tempo II owners and \$79 for Tempo 1.x owners.

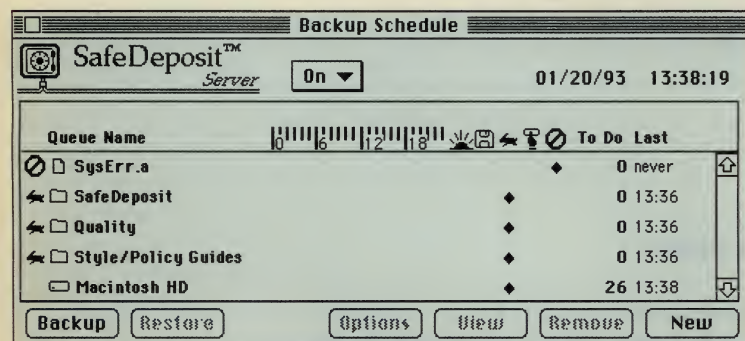
Affinity Microsystems Ltd. is at 1900 Folsom St., Suite 205, Boulder, Colo. 80302. Phone (303) 442-4840; fax (303) 442-4999. □

For the record

The story about Kaetron Software Inc.'s TopDown Viewer for Windows in the Jan. 18 issue incorrectly stated that the product will open files created with the company's OrgChart Express. It will open flowcharts created with two other Kaetron applications, TopDown Flowchart and FlowChart Express.

The Jan. 11 issue should have stated that Dayna Communications Inc.'s DOS Mounter Plus uses a specially designed and licensed version of Software Architect's Formatter Five software titled MultiFormatter and MultiMounter, not software from MacPeak Research. Additionally, NetMounter is no longer available as an independent product but only as a part of DOS Mounter Pro. Dayna is at (801) 531-0600; fax (801) 359-9135.

A chart in the Jan. 11 issue incorrectly stated the maximum printable area of SuperMac Technology's ProofPositive Full-Page and ProofPositive Two-Page dye-sublimation printers. The correct sizes are 8.5 by 12.3 inches and 11.7 by 17.1 inches, respectively.



Dayna's SafeDeposit and SafeDeposit Server can monitor multiple folders in the background and back up changed files immediately or at times specified by the user.

Sigma Designs Reduces the Cost of Increasing Your Screen Size.



A REALLY AFFORDABLE FULL PAGE

	Integrated SCSI Display Products		External SCSI Display Products	Internal PowerBook Video Adapters
	Sigma Designs	Mirror	Lapis	Enviso
Product	Power Portrait	ViewPort	PowerBase	Display Adapter 030
Retail Price	\$749	\$749	\$599	\$795 to \$1,395
Monitor Included	Yes	Yes	No	No
Accelerated	Yes	Yes	No	No
Granite Model	Yes	No	No	No
PowerBooks Supported	100, 140, 145 & 170	100, 140, 145 & 170	140, 145 & 170	140, 145 & 170

*Competitive data accurate at time of printing and subject to change

The best monochrome SCSI display solution just got better for PowerBook and compact Macintosh users. If you're tired of seeing only half a page on your built-in screen, add a full-page, plug-and-play display for the newly reduced price of \$749 — that's a savings of up to \$396 over our previous retail price!*

Race through graphics displays and minimize scrolling with superior QuickDraw acceleration. View your work at its best user-selectable resolution — 72, 80 and 88 dpi. Create a virtual desktop with Hardware Pan to work up close and power through multi-page edits.

And Power Portrait is fully MPR II compliant, and its high refresh rates make it easier on your eyes during long working hours.

Feature for feature, Power Portrait far surpasses the competition. Available in platinum or granite, Power Portrait matches your computer for a sleek, designer-coordinated look.

The price for the performance has never been better. Take advantage of this very good deal.



1-800-845-8086 Ext. 105 or Fax 510-770-2640

P.I.M.S. moves to client-server mode

Tracks inventory at multiple locations

By Kirsten L. Parkinson

Santa Rosa, Calif. — ExecUtron Computers Inc. last week shipped P.I.M.S. 10.0.4, an upgrade that adds a client-server architecture and support for inventory of multiple locations.

P.I.M.S. is a \$4,995 inventory and sales management system that includes customer and vendor tracking, invoicing, and purchasing features.

New features include:

► **Client-server configuration.** P.I.M.S. now runs as a client-server application, with shared files stored on a server. The change in architecture provides speed improvements when several users are connected simultaneously, the company said.

► **Multilocation inventory.** P.I.M.S. 10.0.4 lets users track inventory at several locations, such as warehouses and a central office.

► **Job tracking.** Users can set up P.I.M.S. to track purchase orders, invoices and sales orders relating to a particular project, such as a promotion or ad campaign.

► **Vehicle tracking.** P.I.M.S.

now stores information about company vehicles and maintenance.

P.I.M.S. 10.0.4 requires a 68020 or higher Mac with a math coprocessor, 8 Mbytes of RAM and System 7.

Upgrades are free.

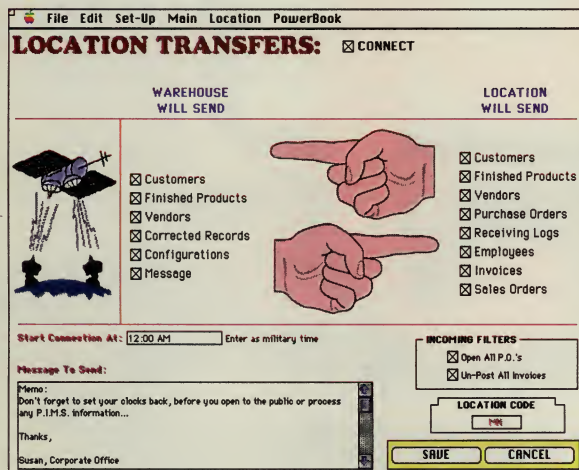
ExecUtron last week also shipped a new \$495 P.I.M.S. module, called P.I.M.S. Connect, that lets users automatically dial up other locations at specified times and exchange information. For example, the central office of a company can connect to the P.I.M.S. systems at its warehouses and share order and inventory information.

P.I.M.S. Connect also lets remote users with any terminal-emulation program dial in to P.I.M.S. and add data, such as new orders or customers.

The company next month will release P.I.M.S. HO, a \$995 low-end version of P.I.M.S. It will include about 35 percent of the program's features and will run on a Classic or higher.

ExecUtron Computers Inc. is at 1831 Guerneville Road, Santa Rosa, Calif. 95403. Phone (707) 525-3715 or (800) 367-9969; fax (707) 528-8885. □

ExecUtron's P.I.M.S. Connect module lets P.I.M.S. users dial up other locations, such as a company warehouse, at specified times and exchange information.



Microtech powers up PB solar panel, SCSI-2 drive

By Kirsten L. Parkinson

East Haven, Conn. — Microtech International Inc. next week will ship a solar panel for the PowerBook and a 2.8-Gbyte addition to its line of SCSI-2 drives.

► **Solar panel.** The \$189 SolarPower powers Mac notebooks without draining the batteries. It screws into the holes on the bottom of the PowerBook, and an arm holds the

photovoltaic panel above the computer when it is being used (see MacWEEK, July 27, 1992).

The panel will ship with SunAIM, an application that determines the best positioning of the PowerBook for receiving solar energy. The software is compatible with the 140, 145, 160, 170 and 180 PowerBook models.

► **2.8-Gbyte drive.** The Nova

XL2700 drive, based on a 5.25-inch Seagate Elite-3 mechanism, will list for \$6,289 in external form; an internal version for the Mac II, IIx, IIcx, and Quadra 900 and 950 will be \$6,129. The drive offers an average seek time of 11 milliseconds and burst transfer rates of up to 10 Mbytes per second with Fast SCSI adapters.

Nova XL2700 comes bundled with Symantec Corp.'s Norton Utilities and Shortlist, Brainchild Corp.'s personal information management program.

► **Bundles.** Later this month Microtech will begin bundling PBTools, Inline Design's PowerBook utilities, with its line of Roadrunner (formerly Athena) drives. Brainchild's Shortlist will be included with Microtech's Nova and Nova XL drives with capacities of 320 Mbytes and up.

By the end of this quarter, Microtech will ship impedance-matched cables, which it said will improve reliability, with all of its Nova and Nova XL drives.

Microtech International Inc. is at 158 Commerce St., East Haven, Conn. 06512. Phone (203) 468-6223 or (800) 626-4276; fax (203) 467-1856. □

AStar smooths out VersionMaster software

By Leonard Heymann

Littleton, Mass. — AStar Technologies Inc. this month shipped a new version of its document-management program that adds several ease-of-use features, including support for aliases.

VersionMaster brings order to workgroup collaboration by allowing only one user at a time to access a shared document, while archiving each new version. The product works with all Mac applications, according to the company.

Version 1.5 enhancements include:

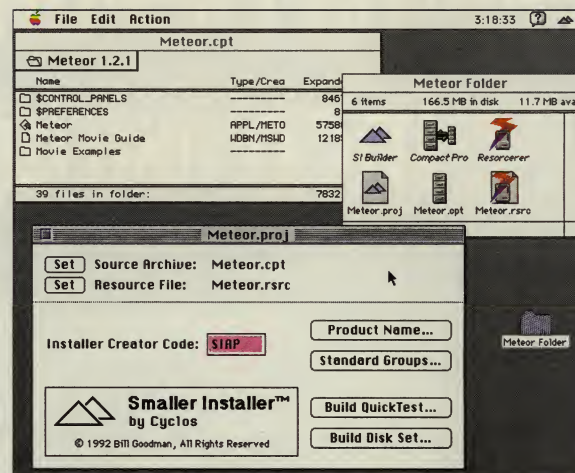
► **Express check-in.** This feature lets users assign the same comment to multiple documents.

► **Activity log.** Individual users can keep track of their activity in project-related files.

► **System 7 support.** VersionMaster now incorporates balloon help, supports aliases and includes a Get Info dialog where users can learn when and why a document was checked out.

VersionMaster is \$199 for a single user, \$799 for a five-pack and \$1,199 for a 10-user version. Upgrades are free for registered users.

AStar Technologies Inc. is at P.O. Box 1100, Littleton, Mass. 01460. Phone (508) 486-8532; fax (508) 486-9757. □



Bill Goodman's Smaller Installer installs software onto users' disks, including "special" folders such as the Control Panels folder.

Goodman builds Smaller Installer; engine eases software distribution

By Robert Hess

San Francisco — Compact Pro author Bill Goodman hopes to make it easier to distribute commercial software with the introduction of Smaller Installer, which creates automated software installers.

Much like Apple's Installer, Smaller Installer, distributed by Cylos, is an engine around which software developers and distributors can build packages of software for installation to users' disks. It can automatically place files in special locations such as the Control Panels folder.

Installer Hook Procedures let developers write their own code resources to perform special actions during installation, such as testing for specific hardware. Subsets of a full installation (such as the Apple Installer's Customized installations) and personalized interfaces are also possible.

A key feature of Smaller Installer is built-in compression of all package components. Apple Installer packages

require the use of a third-party "action atom" to implement automatic compression-decompression.

Goodman said Smaller Installer is easier to use than Apple's Installer and generates smaller packages. Since each floppy disk involved in an installation package contains only one file, it's easy to create Network Installers, or folders residing on a network from which a large number of users may install software.

Unlike Apple's Installer, Smaller Installer cannot perform resource-level installation, which is necessary when installing drivers.

Smaller Installer licenses are \$200 for 1,000 copies, \$500 for 10,000 copies and \$1,000 for an unlimited license.

Smaller Installer is available on on-line services including CompuServe, AppleLink, America Online and GENie.

Cylos is at P.O. Box 31417, San Francisco, Calif. 94131-0417. Phone (415) 821-1448. □

Apple Installer gets Script-Ease

By Raines Cohen

Eugene, Ore. — Glen Canyon Software Inc. this week will ship Script-Ease, an editing tool designed to help developers create Installer scripts.

Apple's Installer utility runs programs, known as scripts, that tell it what software to install and how to install it, based on the user's program selections and hardware and software configuration.

The \$599 Script-Ease can create new installer scripts and customize existing scripts to conform to corporate standards. The program can edit installer rules, comments and the individual components, known as atoms, that direct the installation process.

A program function, Easy Build, prompts a scriptwriter for the files to include, asking questions about the setup and automatically building the script. It includes an icon editor for script makers to draw icons to be displayed while scripts are executing.

The company now sells GCS Compressor/Installer, its installer compression technology, for \$1,199 (see MacWEEK, Nov. 27, 1992, and Oct. 29, 1991). A bundle including both Compressor/Installer and Script-Ease sells for \$1,399.

Glen Canyon Software Inc. is at 3921 Shasta View, Eugene, Ore. 97405. Phone (503) 345-6360 or (800) 477-6947; fax (503) 345-6503. □

KopyKat simplifies copy-and-paste

CRA Z utility adds multiple clipboards

By Robert Hess

Haverhill, Mass. — Is repeated copying and pasting driving you crazy? CRA Z Software last week released a utility that replaces the single Mac Clipboard with an unlimited number of clipboards.

KopyKat is an \$89 system extension that changes the Edit menu in all applications. After users copy or cut an item while pressing the Option key, the Paste menu item becomes a hierarchical menu listing the objects on KopyKat's clipboards.

Items pasted into an application remain on KopyKat's clipboards so they can be pasted more than once.

Users can preview an object's contents before pasting it by highlighting the object in the Paste menu.

Pressing a user-selected modifier key or keys while clicking anywhere displays a pop-up Paste menu listing the clipboard contents. However, the pop-up can't appear when the clipboard can't be pasted, such as when an application is displaying a modal dialog box.

CRA Z Software is at P.O. Box 6379, Haverhill, Mass. 01831. Phone (508) 521-5262. □

On The Air lets users speak over AppleTalk nets

By Kirsten L. Parkinson

Emeryville, Calif. — Users looking for novel ways to take advantage of the Mac's sound capabilities have two new options from Digital Eclipse Software Inc.

The company this month unveiled On The Air, an application that lets users speak to one another over AppleTalk networks, and Zounds, a control panel that plays sounds in the background.

► **On The Air** lets users record a sound or message and then send it to any other user on the network running the program.

The program also lets users save an image and a recorded greeting to be transmitted when they connect to another user.

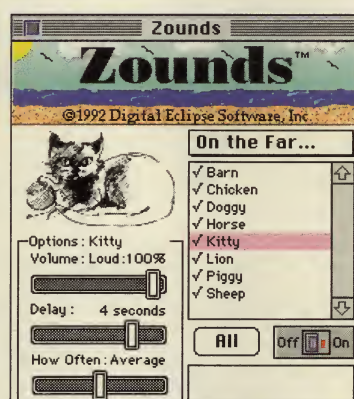
Other features let users create address books of frequently contacted people and limit who can contact them with On The Air.

On The Air can open sounds in AIFF (Audio Interchange File Format), Macromedia SoundEdit and System 7 formats. Recorded sounds can be saved as AIFF files. The program requires System 7 and a Mac with audio-input functions.

On The Air lists for \$79.99 for a two-user package.

► **Zounds**, a \$59.99 control panel, ships with 10 different modules that include sounds arranged around a particular theme, such as rain, farm noises, bird calls and Italian phrases.

Users can control the volume and how often the sounds play. Zounds also lets users mix sounds from different modules or create new modules with snd resource files. The application ships with a collection of prerecorded sound effects, including



Digital Eclipse's Zounds control panel plays sounds, such as these barnyard noises, in the background on users' Macs.

screams, elephants and cows.

The company this month also shipped DiskMaster, a \$99.99 application that lets developers rapidly duplicate disks by storing an image of the disk in RAM and then writing it out to floppies as they are inserted.

Digital Eclipse Software Inc. is at 5515 Doyle St., No. 1, Emeryville, Calif. 94608. Phone (510) 547-6101; fax (510) 547-6104. □

32-MHz '030 board boosts SE, Plus speed

By Neil McManus

Aliso Viejo, Calif. — MicroMac Technology this month released a 32-MHz version of its MultiSpeed 68030 accelerator card for the Mac SE and Plus.

Priced at \$398, the board accelerates the SE by 800 percent to run nearly as fast as a Mac IIvx, the company said. It features a zero-wait-state memory cycle and a 32-bit data path.

In addition to boosting performance, the '030-based card makes virtual memory possible on the Plus and SE. Users will need Connectix Corp.'s Virtual 3.0 utility, which MicroMac offers for \$80. The card has four SIMM sockets that can accommodate up to 16 Mbytes of RAM with 60-nanosecond SIMMs.

Mac Plus owners need a \$40 adapter to use the MicroMac board; users of the company's MicroMac Plus and SE Upgrade Systems can add the accelerator directly. The company sells a math coprocessor as a \$125 option.

The card was previously offered only in 16- and 25-MHz versions.

MicroMac Technology is at 27111 Aliso Creek Road, Suite 145, Aliso Viejo, Calif. 92658. Phone (714) 362-1000; fax (714) 362-5428. □

Apple to broadcast Imagine TV show

Cupertino, Calif. — Apple this month will begin the fourth season of Imagine, its television series for teachers who use computers.

The show, broadcast both by satellite and on an educational cable network, covers topics related to the use of computers in education.

Each broadcast features software demonstrations and call-in

question-and-answer sessions.

The free programs will air from noon to 1 p.m. Eastern time on satellite and from 8 p.m. to 9 p.m. Eastern time on Mind Extension University, a national cable network based in Englewood, Colo.

Mind Extension University is at (303) 792-3111. The Imagine information line is at (408) 862-1204. □

Imagine series broadcast schedule

SATELLITE	CABLECAST	TOPIC
—	Jan. 27	Teacher access to computer technology
Feb. 18	Feb. 24	Technologies for language and global literacy
March 18	March 24	Multimedia and education
April 22	April 28	Technology and the evolving classroom



News

BRIEFS

Teleware lowers bottom line on M.Y.O.B.

Rockaway, N.J. — Teleware Inc. recently cut the price of its M.Y.O.B. Accounting Software from \$249 to \$199.

M.Y.O.B., designed for small-business accounting needs, includes general ledger, invoice and inventory modules. The program offers custom billing options, multilevel password protection, and automatic generation of packing slips and shipping labels.

Teleware Inc. is at 300 Roundhill Drive, Rockaway, N.J. 07866. Phone (201) 586-2200; fax (201) 586-8885.

Azalea software designs, prints bar codes

Seattle — Azalea Software Inc. last month shipped software that designs and prints bar codes.

The \$149 UPCTools generates bar-code symbols in Type 1 PostScript fonts for general retail merchandise, books, periodicals, and musical recordings such as CDs.

UPCTools requires Adobe Type Manager Version 2.0 or greater.

Azalea Software Inc. is at P.O. Box 16745, Seattle, Wash. 98116-0745. Phone and fax (206) 937-5919.

Forminco accessory promises ergonomic mousing

Montreal — Forminco Inc. has jumped into the ergonomic computer-accessory market with its new \$39.95 Mouse Arena.

The Mouse Arena is a large mouse pad designed to support the user's hand in a natural position, reducing strain from repetitive motions.

An antennalike structure keeps the mouse cord free of tangles, while nonskid feet keep the pad from sliding around.

Forminco Inc. is at 9610A Ignace, Brossard, Quebec J4Y 2R4, Canada. Phone (514) 444-9488 or (800) 663-6764; fax (514) 444-9378.

WordStar delivers funny fax cover sheets

Novato, Calif. — WordStar International Inc. this month shipped a collection of humorous fax cover-sheet templates designed to attract attention to users' faxes.

The \$49 Under Cover contains fax covers that can be opened from any word processor. Users then can type directly onto the document or paste a message from another program. The cartoon graphics also can be edited from any graphics application.

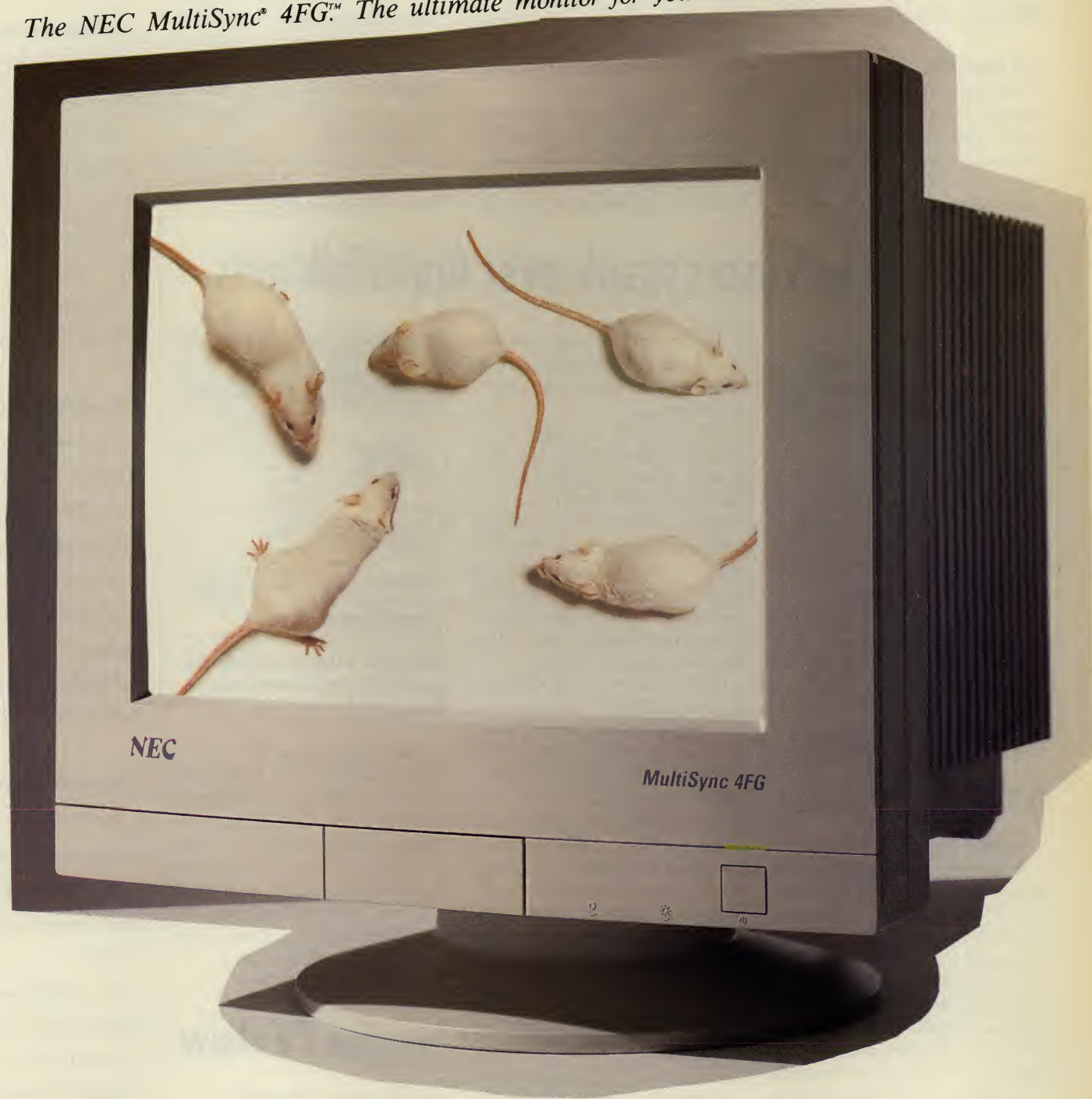
WordStar International Inc. is at 201 N. Alameda Del Prado, Novato, Calif. 94949. Phone (415) 382-8000 or (800) 227-5609; fax (415) 883-1629.



Announcing a

*At NEC, we've developed
hundreds of computer
products expressly
for Mac systems:
from our highly-
acclaimed MultiSync
monitors, MultiSpin™
CD-ROM readers
and Silentwriter® laser
printers, to our
Professional Graphics
Series, which includes
our new 27" MultiSync
3PG data monitor and
MultiSync 6PG and
9PG Projection Moni-
tors for images as large
as 25 feet.*

The NEC MultiSync® 4FG™. The ultimate monitor for your Macintosh®.



*-MacUser Magazine
Aug. '92*

better mousetrap.

The least you should do for your Mac®



In 1992, the only monitor to snag the coveted five-mice rating was an NEC monitor: the MultiSync 4FG. After running it and 13 others through the most rigorous technical evaluation they'd ever used for testing monitors, *MacUser* magazine concluded, "If you're looking for the sharpest display, the NEC MultiSync 4FG should be your top choice." What more can we say? Glad you asked.

Our **AccuColor™ Control System** prompted *MacUser* to make special mention of the "easy color adjustments." AccuColor lets you adjust on-screen colors, so if you're looking for mouse-tail pink, that's what you'll get.

If, however, color control is not a priority for you, you'll be very happy with NEC's MultiSync 3FGx monitor, which shares almost all of the 4FG's award-winning features. Both monitors produce sharp, bright images, crisp graphics and vibrant colors. An Invar shadow mask provides increased brightness without loss of focus.

Another big idea—the display area. The large 15" screen (13.8" active display area) coupled with FullScan™ capability for edge-to-edge images gives you a larger display area than typical 13" or 14" RGB monitors.

How do you make an NEC MultiSync monitor work with your Mac? Just plug it in, using NEC's free FG/Mac cable adapter. It works with the Mac's on-board video, so you won't need an add-in video board*.

Both monitors are compatible with the Mac® II family, Quadra™ series, LC's, PowerBooks™ and PC systems. So you can use just one monitor for both types of platforms. *MacUser* noted the "powerful and versatile controls make switching from a Mac to a PC a snap."

And to make these monitors as user-friendly as possible, we've included ergonomic features such as a tilt/swivel base and up-front user controls. Plus, our Reduced Magnetic Field™ technology meets the strict Swedish MPR II guidelines for magnetic field emissions.

There are lots of reasons for considering an NEC MultiSync monitor for your Mac—the sharp, bright images, the vibrant colors, the large display area, the flexibility, the compatibility—to name five. And the 🐭🐭🐭🐭🐭 to name five more.

For more information on our award-winning monitors, call 1-800-NEC-INFO (in Canada: 1-800-343-4418). Or for a complete brochure via fax, call NEC FastFacts™ at 1-800-366-0476, request #62234.

*For Macintosh 640 x 480 resolution, just attach NEC's FG/Mac cable adapter and plug into: Macintosh IIfx, LC, LCII, IIfx, IIfx, Quadra™ 700, Quadra 900, Quadra 950, Performa™ 400, Performa 600, PowerBook™ 160, PowerBook 180, and the PowerBook 210 and PowerBook 230 with either the DuoDock™ or MiniDock™. Or with an add-in video card: Macintosh II, IIfx, IIfx, PowerBook 140, PowerBook 145, and PowerBook 170. Get the 640 x 480 FG/Mac adapter free by calling NEC at (312) 622-7427 8:30AM-5PM CST.

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Because ↑ is the way you want to go. **NEC**

APS Technologies ships new internal, external hard disks

By Jeff Ubois

Independence, Mo. — APS Technologies Inc. last month shipped new internal and external 500-Mbyte, 1.2-Gbyte and 2.4-Gbyte hard disk drives using Micropolis mechanisms.

The new 1.2-Gbyte drives have an average seek time of 9.1 milliseconds and a sustained transfer rate of up to 3.9 Mbytes per second, according to the company.

The 3.5-inch 500-Mbyte drive has a transfer rate of up to 2.9 Mbytes per second and an average seek time of 9.1 milliseconds. The 2.4-Gbyte drive, a 5.25-inch, full-height mechanism, offers an average transfer rate of up to 3.1 Mbytes per second and an average seek time of 12.4 milliseconds.

The 500-Mbyte and 1.2-Gbyte internal models fit in all Mac models except the IIsi and the Classic and LC series.

The 2.4-Gbyte drive can be installed only

New APS Micropolis drives

	INTERNAL	EXTERNAL
500 Mbyte	\$1,299	\$1,369
1.2 Gbyte	\$1,999	\$2,069
2.4 Gbyte	\$2,899	\$2,999

in six-slot Mac II models and the Quadra 900 and 950 CPUs.

All drives include installation instructions and SCSI cables.

APS provides a 30-day money-back guarantee; the drives also are backed by Micropolis' five-year warranty, which is serviced through APS.

APS Technologies Inc. is at 2900 S. 291 Highway, Independence, Mo. 64055. Phone (816) 478-8300 or (800) 235-2753; fax (816) 478-4596. □

FTG sheds light on a mouse alternative

By Nathalie Welch

Stanton, Calif. — FTG Data Systems this month lit the way to a mouse alternative with its new PenDirect light pen series.

Available now in three models, FTG's light pens let users draw, edit, point, click, select and drag screen elements by touching the pen tip to the screen, or in the high-end model, by holding the pen several inches from the screen. The pens are particularly suitable for freehand drawing, the company said.

All three models connect via an external serial device that includes a microprocessor.

► **PenDirect for Mac**, priced at \$498, comprises a black-aluminum light pen with a push-tip switch and comes with two-year warranty.

► **Deluxe PenDirect for Mac**, priced at \$548, is a stainless-steel light pen with a push-tip switch. It comes with a five-year warranty.

► **PenDirectPro for Mac**, priced at \$699, features a stainless-steel stylus that is held a few inches from the screen. It comes with a separate blue flood unit that provides sync

separation and floods the screen with light, making the pen easy to use with 24-bit-color displays. It has a two-year warranty.

The blue flood unit is available separately for \$149. It can be used to make the PenDirect and Deluxe PenDirect models compatible with 24-bit-color displays.

The user's mouse is reactivated when the pen is not pointing at the screen.

The pens work with all Mac II, LC and Quadra computers and with all popular Mac applications, FTG said.

FTG Data Systems is at 8381 Katella Ave., Stanton, Calif. 90680. Phone (714) 995-3900 or (800) 962-3900; fax (714) 995-3989. □

Qdea renames, updates Update! file-sync utility

By Robert Hess

Pine Springs, Minn. — Qdea is updating its file-synchronization utility and changing the product's name.

Previously called Update!, the product will now be known as Synchronize!. The name change accompanies a new version, 2.1.

Synchronize! works in the background to keep user-selected folders synchronized, copying the newest document in a folder to a corresponding folder on another volume.

New features in Version 2.1 let users delete files or reverse the copying direction of files, move files to another folder instead of copying them, synchronize existing files only, and select files based on name and label.

The update also adds support for aliases in the synchronized folder, can put a PowerBook to sleep after synchronization and adds on-line help.

Qdea is offering Synchronize! 2.1 for \$49, the same price as Update! 1.1, until March 1. After then, Synchronize! will sell for \$59. Upgrades are \$23 or free to users who purchased after Dec. 1, 1992.

Qdea is at 6331 Hilton Court, Pine Springs, Minn. 55115. Phone (612) 779-0955, (800) 933-9558. □

4D developers have tool on their side to help fix the bugs

By Robert Hess

Mamaroneck, N.Y. — Developers of databases in ACI US's 4th Dimension have fewer excuses for not fixing bugs in their code with the announcement of Feedback for 4th Dimension, a new tool from Macintosh Business Systems Inc.

Once installed in a database, Feedback watches for 4D errors indicating a bug in the database. When one occurs, Feedback takes a

snapshot of the screen, records the user's previous actions, and logs the date and time.

Users also can initiate log entries by pressing a key, and users can attach their own comments and suggestions to the automatically recorded data.

Developers can set Feedback to create snapshots at any point in their program for debugging purposes.

If other users on the network are logged

into the database, their previous actions are recorded as well.

Included with Feedback for 4th Dimension is Backtracker, a companion program that reads Feedback's data and provides reporting and follow-up features for database developers.

Macintosh Business Systems Inc. is at 3 Country Lane, Mamaroneck, N.Y. 10543. Phone (914) 698-7215; fax (914) 698-0224. □

You Want Macintosh Terminal Emulation
So You Can TCP To UNIX,
LAT To VAX, Dial Your BBS
And Transfer Files All At Once?
Get Serious. Get PacerTerm.

PacerTerm is simply the best Macintosh terminal emulator for corporate networks. Multi-windowing, HyperTalk-based scripting, SoftKeys and full keyboard remapping? Only PacerTerm has everything you need. If you want it all, get serious. **Call 1-800-PACER-02.**



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Also available through MacWarehouse and Falcon Microsystems.

JVC Information shipping CD-ROM production system

Huntington Beach, Calif. — JVC Information Products Co. recently introduced the Personal Archiver for Macintosh, a \$9,950 CD-ROM production system.

The Personal Archiver, which supports only the Mac-standard CD-ROM format, hierarchical file system, can be upgraded with software to the \$12,799 Personal RomMaker, which is able to write both Apple HFS and ISO 9660 PC-standard CD-ROMs.

Personal Archiver, with a one-year warranty, requires a Mac IIsi or higher with System 7, 4 Mbytes of RAM and Claris Corp.'s HyperCard 2.1.

JVC Information is at 19900 Beach Blvd., Suite I, Huntington Beach, Calif. 92648. Phone (714) 965-2610; fax (714) 968-9071. □

CheckMark revamps accounting apps

By Jeff Ubois

Fort Collins, Colo. — CheckMark Software Inc. shipped upgrades to its MultiLedger and Payroll products last month.

► **CheckMark MultiLedger 3.0** includes a new backup utility, a 1099 miscellaneous income utility, and customer and vendor credit limits.

"The automatic backup is a real plus," said Leslie Murdock, principal of Murdock and Associates, a Mountain View Calif.-based financial consulting firm. "We like MultiLedger because it is easy to train a clerical person to do most of the work and because it is a very stable platform, which is

really critical with accounting software."

The upgrade is free to users who purchased MultiLedger after Oct. 31, 1992, and \$75 for other users. A single-user version is \$395; a five-user version is \$695.

► **Payroll 5.0** now lets users export checks and employer tax records to Teleware Inc.'s M.Y.O.B.

Other new features include the ability to export pretax deductions such as 401k from federal, state and local taxes and a Find com-

mand that lets users locate records quickly. Version 5.0 comes with 1993 tax tables.

CheckMark Payroll is \$295; upgrades to Version 5.0 are free to users who purchased the program after Oct. 1, 1992, and \$65 for other users.

A free demo disk of both products also is available.

CheckMark Software Inc. is at 1520 E. Mulberry, Suite 200, Fort Collins, Colo. 80524. Phone (303) 484-3541 or (800) 444-9922; fax (303) 484-0429. □

Shana upgrades fill out electronic-forms line

By Jeff Ubois

Edmonton, Alberta — Shana Corp. recently shipped a series of new products and upgrades for electronic-forms automation.

► **Informed Foundation.** This new \$595 bundle includes the company's Informed Designer, Informed Manager, Informed Revision Distributor and Informed Number Server applications that let users build, distribute, fill out and control electronic forms.

► **Translators.** Shana now sells \$149 translators for forms created with two formerly competing but now discontinued products, Claris Corp.'s SmartForm and Adobe Systems Inc.'s TrueForm. Shana said the two companies are encouraging their users to switch to its products.

► **Upgrades.** Shana upgraded Informed Manager and Informed Designer to Version 1.3.3, adding support for CE Software Inc.'s QuickMail. Both products already support Microsoft Mail. Informed Manager is \$195; Informed Designer is \$295.

The company has demonstrated versions of its products with support for AOCE (Apple Open Collaboration Environment) and AppleScript scripting language and promises to deliver them when Apple releases the system extensions later this year.

Shana Corp. is at 9650 20th Ave., Suite 105, Edmonton, Alberta T6N 1G1, Canada. Phone (403) 463-3330; fax (403) 463-3343. □

JIAN assists users with safety plans

Los Altos, Calif. — JIAN Tools for Sales Inc. recently announced SafetyPlanBuilder, a package that includes the boilerplate text that users need to write a legally acceptable business safety plan, including evacuation details, calling trees and different responses to disasters.

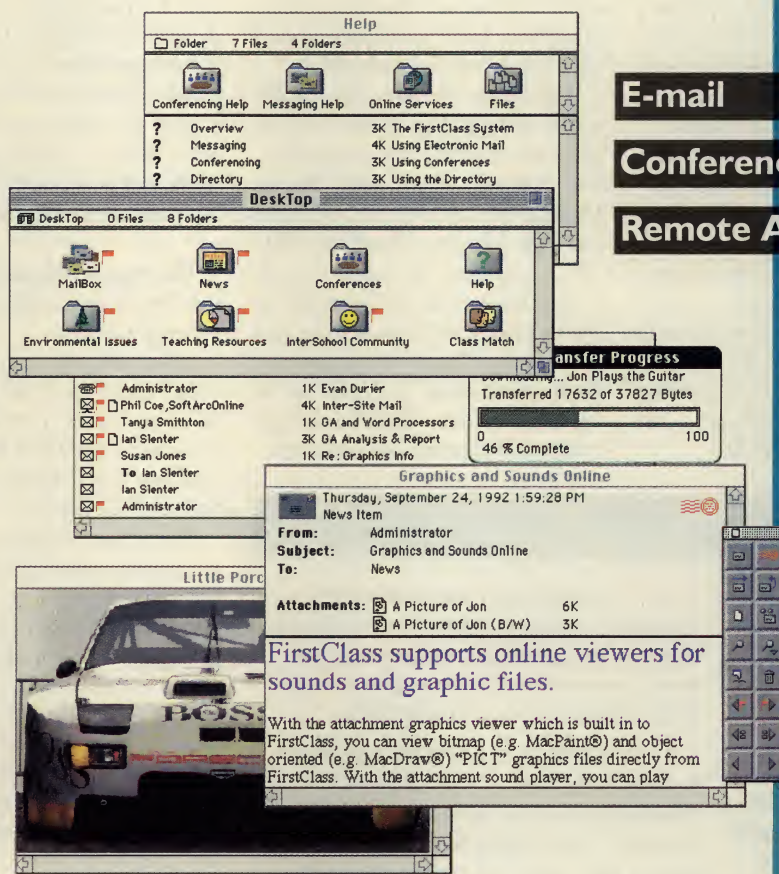
The \$139 application, due out on Windows next month but not for the Mac until May, is aimed mainly at California businesses, which under recently enacted state laws are required to create and distribute to employees a written safety plan or face a minimum fine of \$7,000. Plans developed with the program meet federal Occupational Safety and Health Administration standards, according to JIAN.

JIAN also recently announced PublicityBuilder, a \$129 application that helps businesses develop public-relations strategies.

JIAN Tools for Sales is at 127 Second St., Top Floor, Los Altos, Calif. 94022. Phone (415) 941-9191 or (800) 346-5426; fax (415) 941-9272. □

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MacWEEK

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Dave Caplinger, Orent Graphic Arts, Omaha

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Management

Third parties offer an option

Buying peripherals from a source other than Apple can cut costs and offer more choices.

By Jeff Ubois

It was a million-dollar cost savings, but the users never knew the difference.

When McDonnell Douglas Aerospace Co. of Huntington Beach, Calif., purchased 1,700 Quadras for its space station contract with NASA, it saved \$700 to \$1,000 per machine by avoiding the Apple brand name and buying generic memory and MacStor hard drives.

"Because of some internal targets for pricing, we had to cut costs a bit," said Orv Jordahl, McDonnell Douglas senior manager of information resource management. "To get the configurations we wanted, we had to shave off some money for the hard drives and memory."

Why turn to third parties?

Jordahl is one of the managers who have found that third-party hard drives, SIMMs, monitors, network adapter cards, modems, printers, CD-ROM drives and other peripherals can offer substantial savings, and sometimes superior performance, compared with Apple's products.

Though buying third-party hardware saves money on the initial purchase, it can be costly in the long run if it's not done right: Warranty and service problems, the expense of dealing with multiple vendors and suppliers, and the time to install the new equipment all eat into apparent savings. But for a growing number of Mac managers, the rewards are worth the risks.

"The only strictly Apple parts we use are the CPUs, the LaserWriters, the CD-ROM drives and the small monitors," said Sara Witherow, "the Macintosh guru" at the National Geographic Society in Washington, D.C. The Geographic gets large monitors from SuperMac Technology, hard disks from SyQuest Technology Inc. and MicroNet Technology Inc., modems from Hayes Microcomputer Products Inc., Ethernet cards from Asanté Technologies Inc., SIMMs from a mail-order house, color printers from QMS Inc., and high-capacity printers from Tektronix Inc., she said.

Other managers take a similar approach. "I usually go for Apple parts as a last resort, mainly because they are going to be more expensive," said Loren Smith, microcomputer specialist at Advanced Cardiovascular Systems Inc. of Santa Clara, Calif. "There may be some companies that buy everything from Apple, but Apple doesn't kill itself to stay real competitive."

Third-party products can simplify service issues if they are used in both Macs and IBM PCs and compatibles. For example, Smith uses Storage Dimension hard drives for both Macs and PCs. He also substituted NEC 3FGX monitors for Apple 13-inch displays because the NEC models cost \$40 to \$50 less and also could be used on company PCs. Recently, however, Smith went back to Apple for its 14-inch monitors, which he said are comparable in price, but a bit larger.



ROB CRANDALL

In addition to lower costs, third-party products sometimes offer better features. "We buy Radius video cards because for the same amount of money we get a lot more toys — the Radius has a wider range of screen resolutions, plus it is quite a bit faster," Smith said.

"Apple doesn't stay on the leading edge for peripherals — it lets others do that, for example, Global Village [Communication Inc.] has had high-speed modems for the PowerBook for a year, but Apple won't ship [one] until March," Smith said. "What Apple makes is usually kind of basic, but you know it will work."

The right choice. Finding good third-party deals takes research and investigation.

"The primary caution is to do your homework well," Jordahl said. "Get evaluation products and run them for a month to make sure the machine people end up with is what will really do the job."

Smith also recommends getting evaluation units of third-party items before committing to a major purchase. "We say 'hey, we are investigating this technology and we would like to evaluate your product' and most vendors will cooperate and provide an evaluation unit."

Jordahl said that after looking at the manufacturer's specifications, he benchmarks products himself and checks for attributes that may not be obvious from product literature. "For example, a noisy drive is annoying — you have to look at it from a user as well as an IS standpoint," Jordahl said.

It's also important to check out the reliability of the manufacturer, as well as of the products. "A five-year warranty is no good if the company goes out of business," Jordahl said. "Also, if you're buying in quantity, you have to find out whether they can actually deliver the product."

Dealers and resellers need to be checked out, too. "You still have to

buy from a reputable dealer — that is the key, not who is the manufacturer, but who is the dealer, and can they support the product," said Laura Leach, director of MacAcademy of New Jersey in Parsippany. One indicator of potential trouble is if a dealer asks for money up front because manufacturers won't extend credit.

For users buying for homes or small businesses, other considerations apply. "In the consumer market it's entirely different — for example, lots of small businesses in homes find the best buy is from a discount place," she said. "For them, we recommend buying the whole bundled Apple system because they won't save that much buying components — it's not worth the time and energy."

Besides, Leach said, "How can you beat a one-year home warranty?"

Hidden costs. Clearly, buying third-party hardware has some hidden costs — research, testing, installation and managing additional vendor relationships all take time.

"We had to install the drives and the SIMMs ourselves — had we been able to afford Apple products that would have all been done for us," Jordahl said. "If we had our druthers we would have stayed with all Apple products because it makes life after sale much easier."

Buying third-party products also adds administrative tasks. "It makes it more complex — you have to keep copies of all the warranties if you bought from multiple vendors, but even if you are dealing with many different manufacturers, you might be buying from one dealer," Leach said.

Despite the hassles, Leach said, "It's rare we recommend Apple hardware other than the actual CPU in the business environment."

In the end, it often comes down to a question of POM vs. FUD: Apple products may offer peace of mind for some buyers, while lower-priced third-party products come with fear, uncertainty and doubt. □

Sara Witherow, who acts as Mac guru for the National Geographic Society, said the company buys only a few Apple-brand peripherals, such as LaserWriters, CD-ROM drives and some monitors. Other peripherals come from an assortment of third parties.

Calendar of Events

FEBRUARY

1-4 ComNet '93, Washington, D.C. Voice and data conference and exposition. Contact World Expo at (508) 879-6700 or (800) 225-4698; fax (508) 872-8237.

1-4 Object World, Boston. Conference and exposition focusing on the business and technical aspects of object technology. Contact World Expo at (508) 879-6700 or (800) 225-4698; fax (508) 872-8237.

2-4 Image World, San Jose, Calif. Computer graphics show including animation, video editing and directing. Contact Knowledge Industry Publications Inc. at (914) 328-9157; fax (914) 328-9093.

7-10 Document and Image Management Systems Conference, Lake Buena Vista, Fla. Lectures, workshops and panel discussions on the latest imaging systems. Contact BIS Strategic Decisions Inc. at (617) 982-9500 or (800) 874-9980; fax (617) 982-1724.

16-18 Mobile93, San Jose, Calif. Portable systems show covering personal communicators, digital assistants, wireless messaging and pen-based computers. Contact Technologic Partners at (212) 696-9330; fax (212) 696-9793.

16-19 ATXPO 93, Santa Clara, Calif. The theme of this conference and exhibition is "PostScript Language Technology and Beyond." Contact Adobe Technology Exchange (ATX) at (408) 562-6104 or (800) 446-5622; fax (408) 562-6381.

18-19 Macintosh Marketing Conference, San Francisco. Co-sponsored by Apple, this conference covers marketing issues for salespeople, managers and marketing professionals. Contact Sumeria Inc. at (415) 904-0811; fax (415) 904-0888.

Please submit notices of conferences, trade shows and other Mac-related events to Calendar, MacWEEK, 301 Howard St., 15th Floor, San Francisco, Calif. 94105, or fax (415) 243-3651. No training or educational seminars please.



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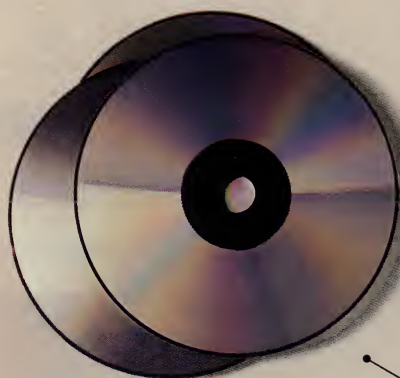
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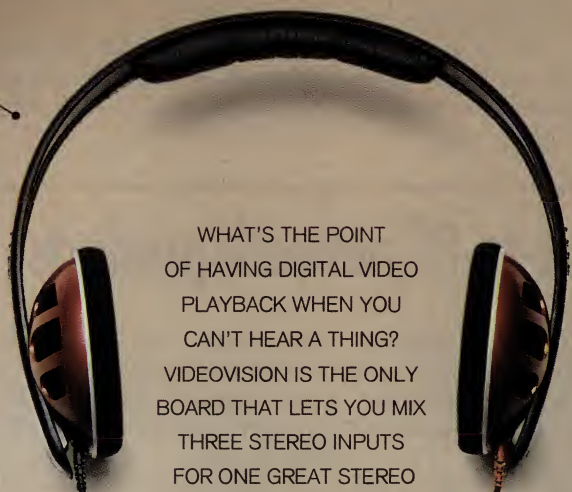
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Cisco 7000 to ride two speedy CPUs

New model includes two processor cards

By Mitch Ratcliffe

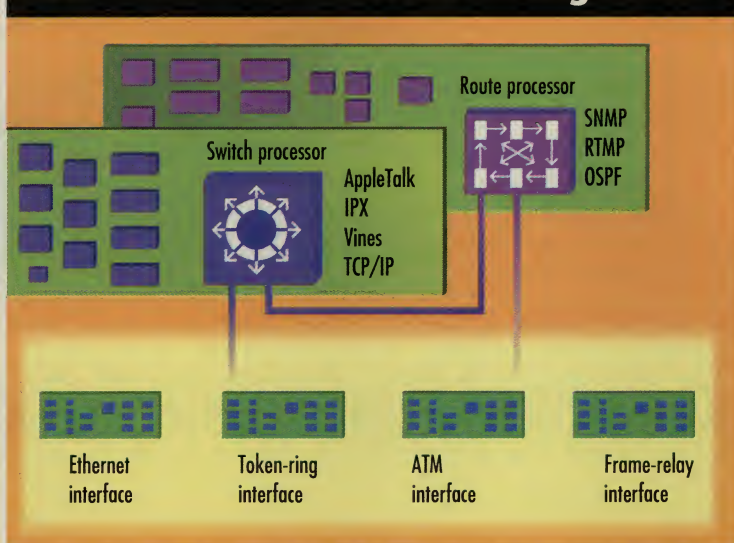
Menlo Park, Calif. — Cisco Systems Inc. last week adopted a divide-and-conquer approach to enterprise networking when it introduced a router that will be the company's development platform for high-speed network services.

The new Cisco 7000 router is a \$19,990 router chassis that ships with separate processor cards dedicated to switching and route management. The switching module includes support for AppleTalk Phase 1 and 2, Novell Inc.'s IPX (Internetwork Packet Exchange), and TCP/IP protocols, among others. The routing management card handles SNMP (Simple Network Management Protocol) and router-to-router communications.

The Cisco 7000 includes slots for five network interface cards. Ethernet, token ring, Fiber Distributed Data Interface and other cards are priced from \$6,500 to \$22,000. The company also said it will ship Asynchronous Transfer Mode and Primary Rate ISDN (Integrated Services Digital Network) cards in 1994.

The router includes redundant

Cisco 7000 router divides routing duties



power supplies and the ability to upgrade router software in flash-memory chips. Also, Cisco said an upgrade due this summer will let managers perform upgrades and diagnostics on the 7000 using PCMCIA flash-memory cards.

The new multiprocessor architecture lets the 7000 handle 50 percent more packets each second than Cisco's former high-end device, the AGS+ router, according to tests conducted by the Harvard Network Device Performance Testing Laboratory in Cambridge, Mass.

Separating switching and router management functions will enable the next step in the evolution of Cisco's routers, the company said. During the next several years, the bandwidth-hungry switching algorithms now carried out in software running on a card will be hard-coded in a chip set, which Cisco said will double the 7000's routing throughput.

Cisco Systems Inc. is at 1525 O'Brien Drive, Menlo Park, Calif. 94026. Phone (415) 326-1941; fax (415) 326-1989. □

usrEZ sends out netSecure pack to protect AppleShare folders

By Leonard Heymann

Tustin, Calif. — usrEZ Software Inc. this week will extend the reach of its security software with a new program that protects folders on AppleShare servers.

The new netSecure can password protect and encrypt specific folders on AppleShare or other AFP (AppleTalk Filing Protocol) servers. Encryption occurs on local workstations so no passwords or unscrambled data are transmitted over the network when users access protected folders. Access can be controlled by either individual users or a network administrator. netSecure works over AppleTalk Remote Access links as well as LANs.

According to usrEZ, on a Mac IIci the program encrypts data at

100 Kbytes per second using Data Encryption Standard algorithms, or 1 Mbyte per second using its ultra-Crypt algorithm. Users will experience no degradation in local Mac, server or LAN performance with netSecure, the company said.

netSecure pricing starts at \$179 per user. The company offers multi-user versions, called lanPAKs, including a five-user version that costs \$716, a 10-user version priced at \$1,342 and a version for 20 users for \$2,506. A lanPAK consists of a user guide for each licensed machine and one master disk. Site licenses are available for 100 or more Macs.

usrEZ Software Inc. is at 13271 Montecito, Tustin, Calif. 92680. Phone (714) 573-2548; fax (714) 573-8329. □

NovaLink, NovaTerm to 3.0; BBS offers new interface tools

By Nathalie Welch

Huntington Beach, Calif. — ResNova Software Inc. next month will ship a set of upgrades to its bulletin board system software that simplifies the task of setting up custom graphical interfaces.

NovaLink Professional 3.0 will include a new server editor that lets administrators build the system by dragging items from a tool palette. Currently, system operators use a command-line interface to construct the NovaLink servers that provide users with electronic mail, public file areas, message forums and real-time conferencing features. Using the editor to construct the server results in the cre-

ation of a NovaView user interface to that server.

Systems set up with NovaLink Pro 3.0's server editor will be accessed via ResNova's client package, NovaTerm, which also will be upgraded to Version 3.0. NovaTerm 3.0 will support styled text, the ability to save message files to disk and improved addressing features.

RIPscrip, a graphical front end for DOS, lets IBM PC and compatible clients access Mac-based NovaLink Pro 3.0 servers.

RIPscrip costs \$175 per DOS client. NovaLink Pro 3.0 will cost \$300 for a base configuration, which includes 20 NovaTerm 3.0

See NovaLink, Page 20

COPS beefs up line of Mac-to-PC network products

Gives DOS users access to AppleTalk

By Nathalie Welch

Norcross, Ga. — CoOperative Printing Solutions Inc. this month announced a flurry of Macintosh-to-PC networking products for AppleTalk LANs.

The company is preparing an upgrade to its implementation of the AppleTalk protocols for IBM PCs and compatibles running Microsoft Corp.'s Windows, as well as a new version for DOS users. In addition, the company now offers ShirtPocket Software Corp.'s AppleShare-compatible file servers and DayStar Digital Inc.'s LocalTalk cards for PCs.

► **COPSTalk for DOS.** Next month, COPS plans to release its \$99 COPSTalk for DOS software, which

will give PC users access to AppleTalk services through most Ethernet cards and through LocalTalk cards from Apple, DayStar and Farallon Computing Inc.

► **COPSTalk for Windows.** The upgraded version, 1.1, will include a file redirector, which provides low-level file system access. COPSTalk for Windows 1.1 is due to ship Feb. 15 for \$179. Upgrades will be free.

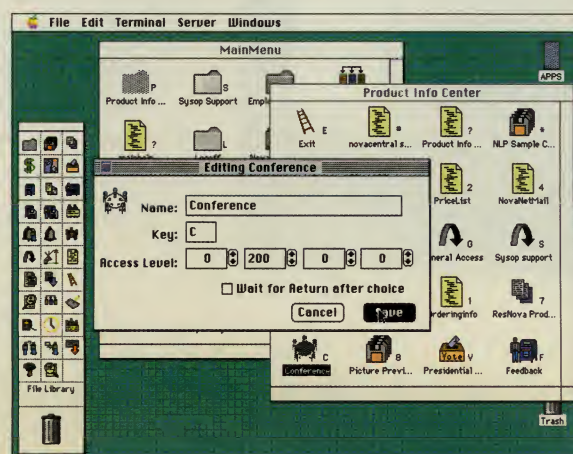
► **PSServe 3.0 Version 2.5.** Due to ship in late February for \$1,095, this upgrade to the company's dedicated print server will run under Windows and have remote queue-management features accessible from any Mac or PC on the network.

► **DayStar deal.** In December, COPS acquired DayStar's LT-200 and LT-MC LocalTalk boards and software, which work in PCs with Industry Standard Architecture buses and Micro Channel Architec-

ture buses, respectively. Prices remain the same, but the names have been changed to COPSTalk LT-I, for \$249, and COPSTalk LT-M, priced at \$299.

► **ShirtPocket agreement.** Also in December, COPS became the exclusive distributor of the EasyServer file-server series developed by Tempe, Ariz.-based ShirtPocket. The EasyServer turns an Intel-standard PC into an AFP (AppleTalk Filing Protocol) file server. The software, now called COPS EasyServer, is priced at \$1,200 for a server kit containing a SCSI controller from Adaptec Inc., plus a LocalTalk or Ethernet card. A fully configured, 66-MHz 486-based EasyServer costs \$4,600.

COPS Inc. is at 5950 Live Oak Parkway, Suite 175, Norcross, Ga. 30093. Phone (404) 840-0810; fax (404) 448-7821. □



ResNova's upgraded BBS software, NovaLink Professional 3.0, sports a new interface designer, including an editor that easily modifies the attributes of a server item.



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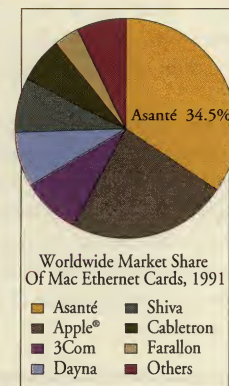
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Source: International Data Corporation, June 1992



ImageNet delivers QM over ISDN

Bundles ISDN card, E-mail gateway

By April Streeter

Basking Ridge, N.J. — ImageNet next month will release a hardware-software bundle that links CE Software Inc.'s QuickMail servers over ISDN.

The \$6,545 ImageGate ISDN Gateway includes custom Quick-

Mail gateway software and an ISDN (Integrated Services Digital Network) adapter card. The switch-hitting ImageGate ISDN can dial in to servers set up with matching ISDN gateways or to those with the company's \$6,545 ImageGate 56 Gateway, which runs over more-common switched-56 lines. In either case, messages are carried using a proprietary protocol that the company said can achieve 55-Kbps throughput without compression.

"If an office is not ready for a leased line, this is a perfect solution," said Bill Brotherton, manager of network services at Raynet Corp. of Menlo Park, Calif. Brotherton uses the ImageGate 56 Gateway and is awaiting the ISDN version to help him connect to European subsidiaries where switched-56 lines are not available.

"We used to use analog modems to send files because a leased line still costs a fortune," Brotherton said. "Now I send a 400-Kbyte file in less than two minutes at about half a cent per kilobyte. When you figure AppleLink is about 30 cents per kilobyte, the bottom line is this solution saves me thousands."

Unlike other QuickMail gateways, ImageGate checks for sufficient hard disk space and the validity of addresses at a remote site before sending files. The software also error-checks the entire transmitted file as well as each block of data. ImageNet said its software provides more-detailed error messages and event logging than standard QuickMail gateways.

The ImageGate ISDN Gateway uses the \$995 Planet-ISDN card from Euronis of Paris (see MacWEEK, Jan. 11).

ImageNet, a division of Cornell Data Systems Inc., is at 28 Penwood Road, Basking Ridge, N.J. 07920. Phone (908) 647-0353; fax (908) 580-9488. □

Cabletron deals multiport serial cards that will support ARA this summer

By April Streeter

Rochester, N.H. — Cabletron Systems Inc. next month will ship two multiport serial cards for its network hubs that will support AppleTalk Remote Access when the company releases a software upgrade later this summer.

The 16- and 32-port Communications Server Interface Modules (CSIMs), which cost \$3,695 and \$7,795, respectively, fit inside Cabletron's Multi Media Access Center hub. The CSIM cards normally are used to attach serial devices to Ethernet networks. The ARA-compatible versions will allow modems to be attached to provide dial-in access for

mobile users or remote networks.

Initially the CSIM cards will support TCP/IP, Digital Equipment Corp.'s LAT (Local-Area Transport) and Point-to-Point Protocol. Support for ARA will be available by the end of this summer in a \$600 software upgrade, Cabletron said. The CSIM cards can be configured and administered from any network-management software that uses SNMP (Simple Network Management Protocol).

The server cards were developed in conjunction with Burlington, Mass.-based Xylogics Inc.

Cabletron Systems Inc. is at 35 Industrial Way, P.O. Box 5005, Rochester, N.H. 03867. Phone (603) 332-9400; fax (603) 332-7386. □

Quota 3.0 gives license to PowerBook users

By Leonard Heymann

Edmonton, Alberta — Proteus Technology is updating its launch-control utility to allow mobile users to take their software licenses on the road.

Quota helps network managers adhere to software licenses by limiting the number of people who can access an application simultaneously. The program also audits software usage to help administrators determine whether additional copies of an application are needed.

Version 3.0, due in February, will let users "check out" applications for use off-site for a predetermined period; the number of launches permitted at the primary site will be correspondingly reduced. Once a remote license expires, users will need to reconnect to the license server to regain access.

Version 3.0 of Quota will run on any networked Macintosh. Previous versions had to be installed on a file or mail server.

Other new features will include:
► **Request queuing.** If all permit-

ted copies of an application are in use when a user attempts to launch a program, Quota will notify the user when a copy becomes available.

► **Force quit.** Quota will close an application automatically if it is unused for a predetermined period to make it available to others who might be waiting for it.

► **Audit enhancements.** A network manager will be able to track launches of unmonitored software, as well as denied launches of monitored programs and printing requests.

A 50-user edition of Quota is \$695. Upgrade pricing has not been set, but users who bought Quota 2.0 after Jan. 1 will receive the upgrade free.

Sassafras Software of Hanover, N.H., also plans to add remote-launch capabilities to its competing KeyServer license server when it ships Version 3.1 later this quarter, according to the company.

Proteus Technology is at 9919 68th St., Edmonton, Alberta T6A 2S6, Canada. Phone (403) 448-1970; fax (403) 425-6882. □

NovaLink

From Page 18

clients for modem users; upgrades will be \$95.

Additional NovaTerm packages cost \$60 for 50 modem users or \$500 for 50 LAN users.

ResNova also plans to release a \$500 gateway to enable users of NovaLink Pro to exchange E-mail with users of CE Software Inc.'s QuickMail. Internet access

will be accomplished via a \$300 TCP/IP Internet Kit, which will provide basic Internet E-mail and news-group feeds. Broader TCP/IP functionality will be available through a \$1,000 TCP/IP Professional Package.

ResNova Software Inc. is at 16458 Bolsa Chica St., Unit 193, Huntington Beach, Calif. 92649. Phone (714) 840-6082; fax (714) 840-0488. □

Gateways B R I E F S



NetWare analyzer adds AppleTalk router alert

Provo, Utah — Novell Inc. this month will ship an upgrade to its network analyzer for NetWare networks that can send an alarm to an administrator when an AppleTalk router goes down.

Version 2.0 of LANalyzer for Windows, formerly LANalyzer for NetWare, will be priced at \$1,495. It runs on any IBM PC or compatible that is equipped with Windows and is part of a NetWare network.

LANalyzer troubleshoots common problems of the network. With the addition of support for AppleTalk Phase 2 and Novell's IPX (Internet-work Packet Exchange) protocol, the software can detect when routers on AppleTalk or IPX segments of the network develop problems and send a flashing warning to the network administrator's computer.

Upgrades from Version 1.0 are \$500.

Novell Inc. is at 122 East 1700 South, Provo, Utah 84606. Phone (801) 429-7000 or (800) 453-1267; fax (801) 638-9273.

HayesConnect bundled with LAN modem

Atlanta — Hayes Microcomputer Products Inc. plans to upgrade its HayesConnect serial-device-sharing software and bundle it in a LAN modem package for AppleTalk networks that can coexist on Macs with AppleTalk Remote Access.

The \$549 Optima 144 LAN Modem package, due in March, includes the \$129 HayesConnect 3.1, which lets an idle ARA modem be used to dial out from a LAN, the \$479 Smartmodem Optima 14400 modem and \$149 Smartcom II data-communications software.

Other enhancements in HayesConnect 3.1 include extended device configurations, additional server settings and expanded support for the Macintosh Communications Toolbox. Owners of HayesConnect 3.0 can upgrade for \$35.

Hayes Microcomputer Products Inc. is at P.O. Box 105203, Atlanta, Ga. 30348-5203. Phone (404) 840-9200; fax (404) 441-1213.

Unlimited Systems dials up fax-modem coupler

San Diego — Unlimited Systems, a manufacturer of telephone connection products, next month will ship an acoustic coupler with a built-in fax modem.

The \$290 Model 305 incorporates a 2,400-bps data and 9,600-bps fax modem based on a Rockwell International Corp. chip. Powered by a 9-volt battery, the device plugs into the Mac's serial port and attaches to the telephone handset to send faxes and data over telephone lines.

The coupler weighs 9 ounces and measures 7.5 by 2 by 1.75 inches. It will ship with communications and fax software, a 3-foot serial cable and Merlin Phone Adapter.

Unlimited Systems is at 5555 Magnatron Blvd., Suite J, San Diego, Calif. 92111. Phone (619) 277-3300; fax (619) 277-3305.



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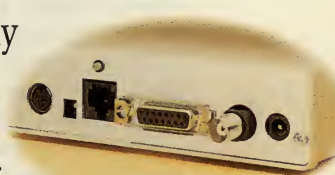


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News Analysis

Internet of the future may be a one-stop information shop

Data sellers such as Dow Jones are setting up shop on the world's largest data network.

By Margie Wylie

Whether it's the wind-speed velocity of an unladen African swallow or the asking price for pork bellies, nearly anything you want to know today is offered for sale on-line somewhere by someone. Finding out who has that information and negotiating the connection, however, is a different story.

With literally hundreds of vendors hawking millions of pieces of information on myriad public and private commercial networks, there exists no comprehensive, uniform and simple way for users to search out the information they need or connect to the specific service where it resides.

That may soon change. As the Internet allows more commercial users on-line, data peddlers such as Dow Jones & Co. Inc. of Princeton, N.J.; Mead Data Central of Miamisburg, Ohio; and Dialog Information Services Inc. of Palo Alto, Calif., are beginning to set up shop on the worldwide network that was once the exclusive territory of military, research and education users.

Should a new Internet standard for searching databases emerge, Mac users could soon find themselves only a command away from solving whatever puzzles them.

But don't apply for a node just to do database searches, yet. Most information providers still are offering only limited Internet access, and they don't seem to be in a hurry to expand.

The way it is. Today, most big information sellers require users to either connect to their mainframes directly, through a private network or via proprietary and sometimes expensive networks such as CompuServe, or by dialing into Tymnet or other commercial networks.

Users can connect to only one service at a time, they usually have to learn a proprietary and often cryptic interface for searching each service, and they usually are charged even when a search isn't successful.

The Internet, through such search services as Wide Area Information Server (WAIS), offers users the prospect of searching several different providers without logging onto different networks and using the same standard, albeit cryptic, commands they use to get at any other Internet data source. Network services such as Telnet let users link up to commercial databases through the systems' native interfaces.

With an increasing number of

Internet-connected networks willing to carry commercial traffic, it has become a viable alternative for corporations to connect to a variety of on-line database services.

"The Internet has sort of snuck up on the commercial world," said Taylor Walsh, an independent consultant based in Washington, D.C., and author of *New Commerce*, a report on emerging business opportunities on the Internet.

Today many big on-line information providers are struggling to meet the commercial users' demand for Internet access, Walsh said.

According to Walsh's estimates, there are about 3 million commercial Internet users in the United States, and the network is still growing, as it has for the past two years, at a rate of more than 20 percent per month. (Other estimates of the growth rate range from 10 percent per month to 25 percent.) With a push for liberalization of Internet usage policies, which have been particularly hostile to free commerce, "the majority of organizations getting connected in the last 18 months have been commercial organizations," Walsh said.

Today, three of the biggest on-line information providers, Dow Jones, Mead Data Central and Dialog, offer some level of Internet access to some users. Dow Jones offers only its News and Retrieval Service, which consists of about 70 databases, via Internet connections. Most of its customers are still academics and researchers, the company said. However, Dow Jones said the interest from commercial users is soaring.

Mead Data Central claims it offers access to its Lexis law database over the Internet only to law schools. But it reportedly is beginning to sell Internet access to both its newspaper database, Nexis, as well as Lexis, to some commercial users who can log onto the services via Telnet.

Both Mead Data Central and Dow Jones offer their services via JvNCnet (John Van Neuman Computer Network), a Princeton, Mass.-based network that charges users for access time in addition to expensive database charges. However, the companies already are realizing a lower operating cost by doing so. Access through commercial Internet providers is more economical than other access methods, said Maggie Landis, spokeswoman for Dow Jones.

Dialog, a Knight-Ridder information service, offers its services through ANSnet, a partially government-funded network that by nature doesn't yet allow unrestricted commercial traffic. Dialog supports only academic and research users on ANSnet, for now.

The way it could be. Perhaps the brightest promise for Internet access, however, lies with a new technology developed jointly by Apple, Dow Jones and Thinking Machines Corp. WAIS is a full-text data-retrieval standard that will let users search for the information they need over the Internet (see *MacWEEK*, Oct. 26, 1992).

Using a single English-like query, users can search for what they need among about 340 WAIS servers on the Internet, then pay only for what they use. Users don't have to navigate the Internet to get to a particular network, such as JvNCnet, and then log onto a service through Telnet. They just send out a request scattershot-style and wait for replies from the WAIS services.

Currently, there are more than 200 free databases available via WAIS over the Internet, according to Seybold Publications Inc.'s *Digital Media* newsletter. Even the Library of Congress plans to take its massive catalog on-line through WAIS. With a WAIS Mac interface already available, users can begin data-surfing WAIS servers today.

The way vendors see it. Yet despite the promise of Internet access and WAIS, many providers appear to be dragging their feet in making more than academic and research, or very limited commercial access, available. WAIS services are considered blue-sky investments by these companies.

Logistically, setting up Internet access takes an investment in time and money that these companies want to be certain will pay off, said Jim Joseph, a spokesman for Mead

Data Central. Many providers have to set up TCP/IP-based access to aging and proprietary mainframe programs designed for X.25 packet-switched connections and proprietary search protocols.

With WAIS servers, vendors have to redefine completely how they charge for their services and settle issues of copyright and usage that arise when their databases are so widely available, Walsh said. But he said he thinks that commercial users could benefit from the work already under way on these problems in public forums. Unlike free databases, there currently is no WAIS server code in the public domain for profit-driven information servers.

There also seems to be fear among commercial information providers that the Internet may yet collapse under the weight of its own success.

"From our perspective, one stumbling block is the growth of the Internet," said Bill Frambes, manager of the technical-support group for Mead Data Central.

The network is growing so quickly that it will soon run out of addresses, according to Jeffrey Schiller, network manager for the Massachusetts Institute of Technology in Cambridge and an active member of the Internet Engineering Task Force, a collection of committees that sets the standards for using the TCP/IP network. The IETF is currently working to extend the Internet's addressing scheme, but "D-day is measured in months not years," Schiller said.

Vendors are skittish about putting their chips on a network that has no central control and whose policies can change on a political whim, company representatives said. Although the network has indeed become more open to commercial traffic, the original NSFnet backbone and now ANSnet, which replaced it, is still subject to a usage policy that prohibits commercial traffic from even passing through on its way elsewhere.

See *Internet*, Page 24





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Internet

From Page 22

Advanced Network Services Inc., an IBM Corp. and MCI Communications Corp. joint venture with the nonprofit Merit Networks Inc., was charged with opening the backbone to a wider range of traffic when it took over management of the Internet in 1989, but so far it has been locked in bitter disputes with other networks about how much it can charge other providers for use of its backbone.

Nevertheless, users can't help but suspect that there's something else behind the reluctance of commercial database providers to play on the giant, nearly free Internet.

Are these giants simply putting off the day when they have to compete head to head in an open information market? Providers today charge connect time, search time and download fees that can climb easily into the hundreds of dollars even for a relatively fruitless inquiry. Under WAIS, they might be passed

over for a service that provides the right information at a better price.

Information service representatives denied the charge: "We're not in the telecom business; we're in the information business. We want people to have as many channels as possible," said Libby Trudell, director of product marketing for Dialog.

In any case, most information providers agree that commercial database access isn't a matter of "if" but "when." □

Emulex to provide AppleTalk support for printer sharing

By April Streeter

Costa Mesa, Calif. — Emulex Corp. will branch into the Macintosh world later this month when it adds AppleTalk support to its printer-sharing devices.

The NETQue, scheduled to ship at the end of January for \$599, will provide a serial and a parallel port to connect two laser printers to a 10BASE T or thin-net Ethernet network.

NETQue will support either AppleTalk or Novell Inc.'s IPX (Internetwork Packet Exchange) protocols.

The two protocols can be simultaneously supported for an additional \$99, and TCP/IP or Digital Equipment Corp.'s LAT (Local-Area Transport) can be added with software upgrades that will cost \$199 or \$299, respectively.

Emulex also will add AppleTalk support later this month as a \$99 software option to its NETJet, a plug-in board shipped last month for Hewlett-Packard Co.'s LaserJet and PaintJet printers. NETJet lets Macintosh users on an Ethernet network access Hewlett-Packard printers via their standard printer drivers.

Emulex Corp. is at 3545 Harbor Blvd., Costa Mesa, Calif. 92626. Phone (714) 662-5600 or (800) 854-7112; fax (714) 241-0792. □

DataPrism for Mac gets a new version number

By Mitch Ratcliffe

Mountain View, Calif. — Brio Technology Inc. last month changed the version number of its DataPrism data-dipper application for Macintoshes when it shipped the first Windows-compatible version of the product.

Version 2.0, available for Macs and IBM PCs and compatibles running Microsoft Windows 3.1, delivers a uniform user interface across both platforms.

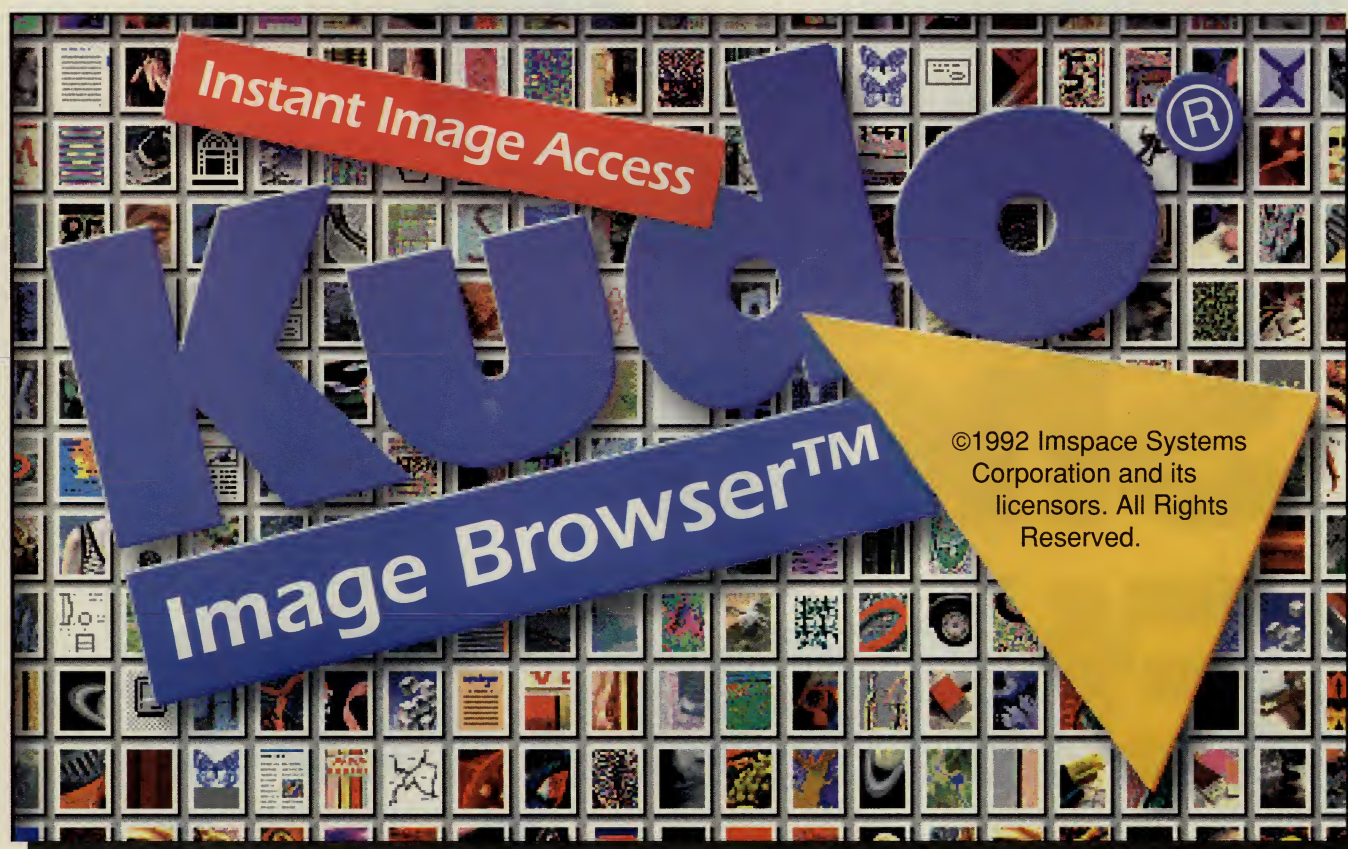
DataPrism lets users construct SQL queries by dragging and dropping variables into windows that represent tables and columns in a relational database, according to the company.

No new features were added to the Mac version, the company said. Brio changed the version number to provide parity with its new Windows version of DataPrism.

"Our customers have been asking for a cross-platform solution to database access," a Brio spokeswoman said. "We gave them a single interface that they can learn in order to support both platforms."

The Macintosh and Windows versions of DataPrism will sell for \$399 per workstation.

Brio Technology Inc. is at 444 Castro St., Suite 700, Mountain View, Calif. 94041. Phone (415) 961-4110; fax (415) 961-4572. □



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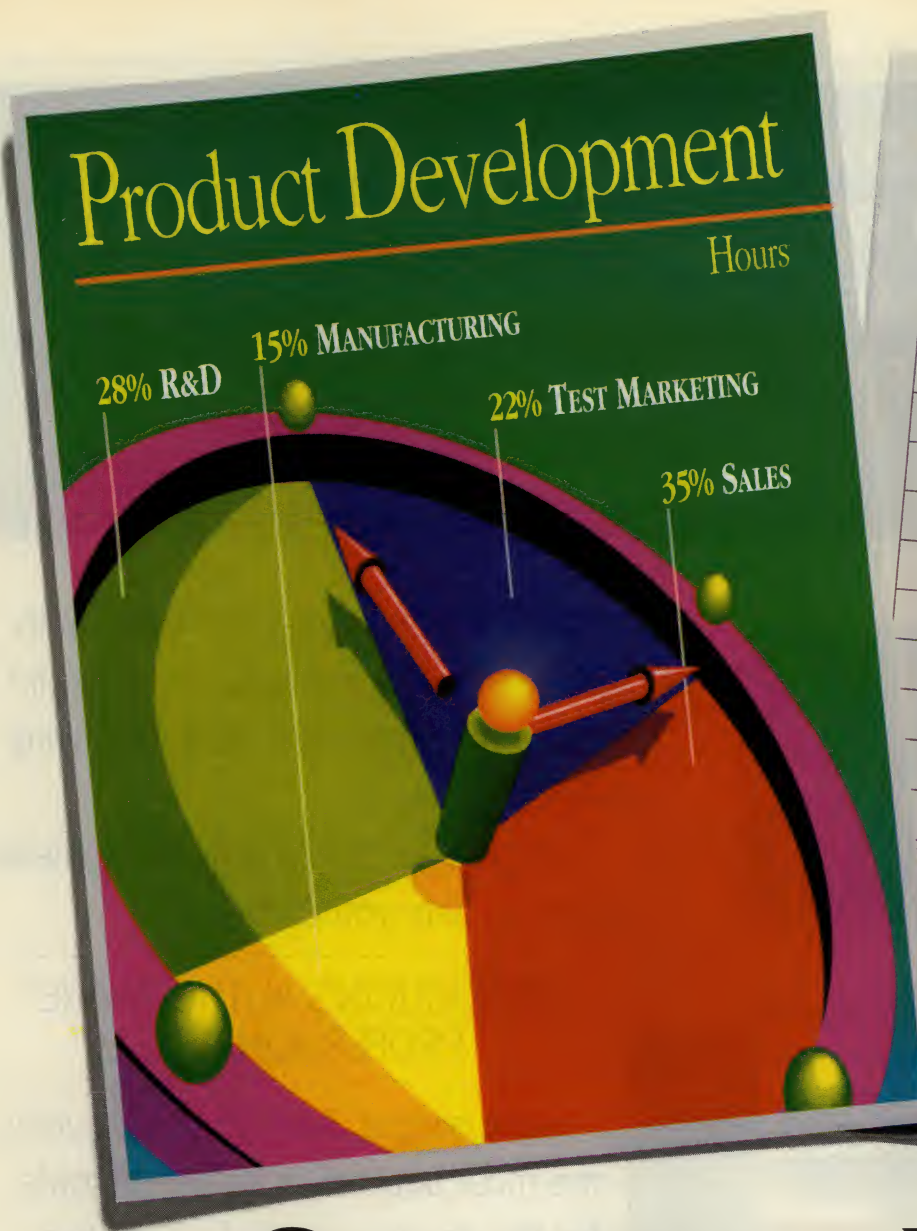
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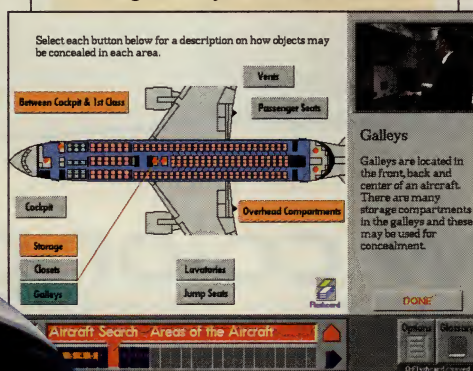
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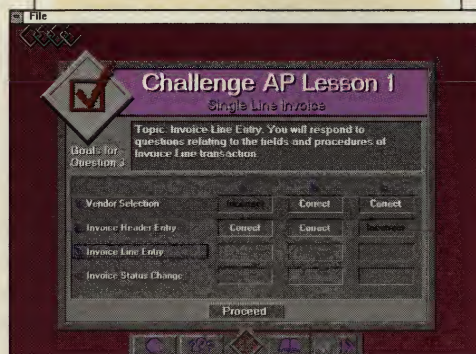
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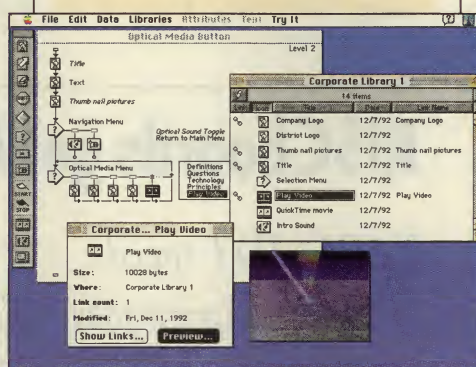
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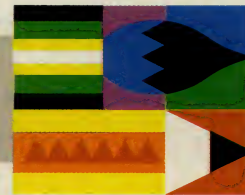
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DiVA spawns VideoShop siblings

Software potpourri spans high, low ends

By Neil McManus

Cambridge, Mass. — DiVA Corp. this spring will release a suite of video-production tools ranging from a simple editing program to a package aimed at video professionals.

DiVA's new software, due in April, will include:

- **VideoShop 2.0**, an upgrade to the QuickTime movie-editing program that will add audio mixing, multitrack video effects, built-in titling, scrolling credits and motion control.

The new version will shed the program's dependency on HyperCard, allowing it to run in a 1.5-Mbyte RAM partition. It will take advantage of QuickTime 1.5 features to provide searchable text, Photo CD support and support for hardware compression boards.

- **Sparrow**, the code name for a low-end editing program aimed at home and education users. Designed to run on low-end color Macs, Sparrow will include features such as collapsible tracks and preset transitions.

- **The Digital Delivery Kit**, a



DiVA VideoShop 2.0 will include a Finder-like environment for organizing video clips and a sequencer for editing movies and adding special effects.

new package that lets users create self-running interactive QuickTime movies. It will come with a utility for dragging and dropping Micons (moving thumbnails of video clips) into HyperCard.

- **The Analog Tool Kit**, software for VideoShop 2.0 that adds timecode support, device control and support for edit-decision lists.

- **Video Clip CD-ROMs**, which

will include hundreds of QuickTime movies created from videos licensed from The Image Bank, a New York stock photo and video agency.

Pricing has not been set, but VideoShop 2.0 likely will retain its \$599 price tag, and Sparrow will retail for less than \$300, DiVA said.

DiVA is at 222 Third St., Cambridge, Mass. 02142. Phone (617) 491-4147; fax (617) 491-2208. □

Nikon warming up CoolScan; slide scanner sets new price low

By Matthew Rothenberg

Melville, N.Y. — The cost of capturing 35mm transparencies took a slide this month when Nikon Inc. introduced a color film scanner that will start at less than \$2,200.

The Nikon LS-10, which Nikon has dubbed "CoolScan," is scheduled to ship in mid-April. The scanner is the size of a floppy disk drive and ships in two versions: a \$2,195 model that fits into the Mac's internal drive bay and a \$2,415 external version that will ship with its own power supply.

CoolScan will use new proprietary LED-based CCD (charge-coupled device) technology to capture eight bits each of RGB (red, green, blue) data per pixel in a single pass at a maximum resolution of 2,700 dpi. It will handle 35mm transparencies as well as negatives. According to Nikon, the LED sensors provide better color fidelity and generate less heat than other scanners.

The new scanner will include an auto-load and eject mechanism that resembles a Mac floppy drive; it automates media handling as well as density and color balance.

CoolScan will ship with a SCSI

interface and Adobe Photoshop plug-in software.

According to Kristy Holch, industry analyst with BIS Strategic Decisions Inc. of Norwell, Mass., CoolScan "fills out Nikon's line." In contrast to the company's \$8,995 LS-3510AF, she said, CoolScan "is meant for the more occasional user who maybe doesn't have the kind of demands a professional environment does."

"Two or three years ago, hardly anyone was scanning 35mm slides except for production houses," Holch said. Now, however, "people are looking at 35mm scanners for many kinds of things. They want a lower-cost scanner, they don't have the same quality requirements, and they're going to want a scanner that's easier to use."

"I think [CoolScan] will take the market by surprise," Holch said.

Nikon reportedly based CoolScan on technology developed by Current Ltd. of Seattle.

Nikon Inc. is at 1300 Walt Whitman Road, Melville, N.Y. 11747-3064. Phone (516) 547-4355 or (800) 526-4566; fax (516) 547-0305. □

La Cie buffs up Silverscanner sequel, puts polish on 24-bit-color controls

By Matthew Rothenberg

Beaverton, Ore. — La Cie Ltd. this month delivered a new color flatbed scanner with a maximum resolution of 1,600 dpi.

Silverscanner II is based on the ES-800C, a CCD (charge-coupled device) scanner from Epson America Inc. of Torrance, Calif. (see MacWEEK, Nov. 9, 1992), but it features firmware from La Cie that enhances brightness, contrast and gamma curves automatically before the scan.

The scanner captures nine bits each of RGB (red, green, blue) data per pixel in a single pass, which it optimizes to 24-bit color. It has a hardware resolution of 800 dpi, which is interpolated up to 1,600 dpi. Working in a 50-dpi preview mode, users can adjust resolution in one-dpi steps and horizontal and vertical scaling in 1 percent increments.

Silverscanner II's flatbed platen accommodates reflective art mea-

suring up to 8.5 by 11 inches; La Cie also offers a \$699 automatic document feeder and a \$999 option for 4-by-5-inch transparencies.

Silverscanner II ships with a SCSI interface and plug-in software for Adobe Photoshop and a range of other image-editing applications.

The scanner costs \$1,599 bundled with Timeworks Inc.'s Color It!; \$1,999 with Olduvai Corp.'s ReadIt optical character recognition software and Photoshop or Fractal Design Corp.'s ColorStudio; and \$2,099 with Photoshop, ColorStudio and ReadIt.

A software upgrade due this summer will add support for the Twain application programming interface standard, which allows direct software links to input devices.

La Cie Ltd. is at 8700 S.W. Creekside Place, Beaverton, Ore. 97005. Phone (503) 520-9000 or (800) 999-0143; fax (503) 520-9100. □

RISC boards get Macs moving on graphics

YARC, IDT speed 3-D, PostScript jobs

By Neil McManus

San Francisco — Mac graphics users can get a jump on the PowerPC by tapping the speed of new RISC coprocessor boards.

Two companies this month introduced Macintosh boards that use RISC chips to accelerate tasks such as 3-D rendering and image processing.

- **YARC Systems Corp.** introduced the MacRageous II, a \$4,895 NuBus card with a 40-MHz AMD 29050 RISC processor. The board comes with 20 Mbytes of RAM, including a 4-Mbyte instruction cache. It replaces the original 33-MHz MacRageous board, priced at \$7,295 for the same configuration.

A \$5,395 version of the board will ship with YARC RenderMan, software that uses the board to

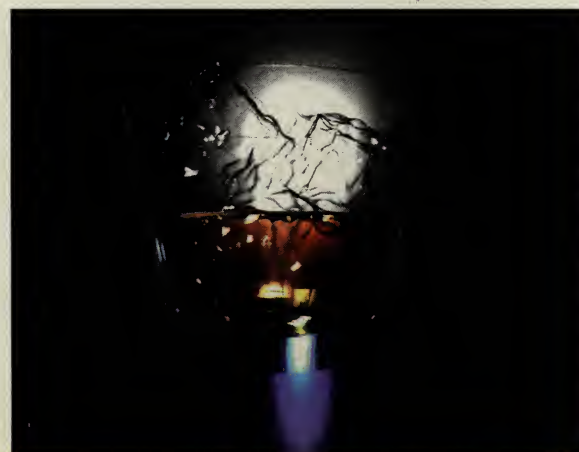
speed ray tracing and 3-D rendering in Pixar's MacRenderMan by eight times over the speed of the Quadra 950.

A variety of other 3-D applications can take advantage of the YARC board, including Visual Information Development Inc.'s Presenter Professional, Gryphon Software's Morph and Specular International Ltd.'s BackBurner.

YARC is shipping a development kit for accelerating Adobe Photoshop filters.

- **Integrated Device Technology Inc.** next month will release CZAR, a \$5,995 NuBus board based on a 25-MHz mips R3000 RISC chip. The card comes with 16 Mbytes of RAM, a floating-point coprocessor, a SCSI port and

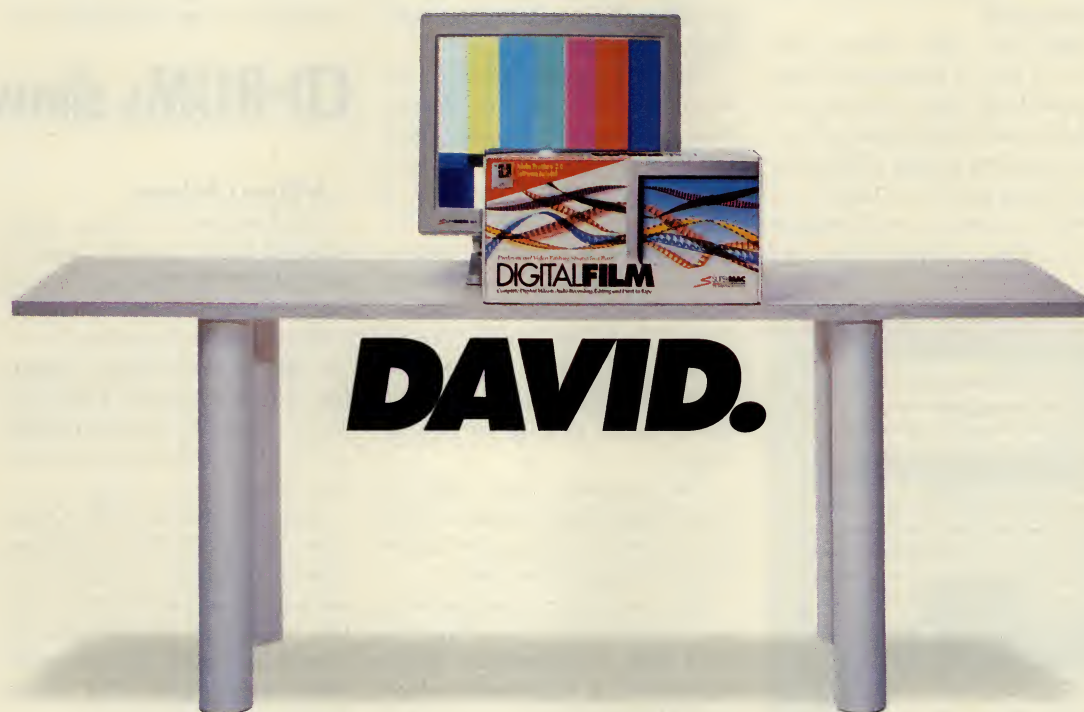
See RISC, Page 30



This 640-by-480-pixel image was modeled in VIDI's Presenter Pro and rendered with YARC RenderMan on the MacRageous II in three minutes and 58 seconds. The same image took 17 minutes to render on the Quadra 950.



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View by View branching out to 3-D

Turbo 3D supports Boolean operations

By Kirsten L. Parkinson

San Francisco — View by View Inc. this month introduced Turbo 3D, a modeling program, and AMAP, an application that generates botanically correct models of plants.

► **Turbo 3D.** Developed by Soft'X of Paris, the \$2,995 Turbo 3D offers drawing tools and about 800 modeling tools, including controls for revolving and extruding 2-D objects.

Turbo 3D also supports Boolean operations, allowing it to perform such functions as welding objects together and punching holes in objects.

Built-in animation features let users designate the start and stop points for a sequence, and Turbo 3D will generate the in-between steps. Animations can be saved either in Turbo 3D format or as PICS files.

The program ships with some basic 3-D shapes, such as cubes and cones, and it lets users view models in wireframe mode or three levels of flat shading.

Users can export 2-D images as PICT or Encapsulated PostScript files.

The program supports DXF (Drawing Interchange File) and RIB (RenderMan Interface Byte-stream) formats for 3-D export.

Turbo 3D is available at a special price of \$2,250 through Jan. 31.

► **AMAP.** With the \$1,600 AMAP, users can create botanically

accurate models of 50 different plants, including bamboo, chestnut trees and daffodils.

Developed by Cirad of Montpellier, France, AMAP allows users to choose the exact size, age and complexity of the plant as well as how many different plants should be generated at one time.

Users also can designate the number of flowers, leaves and fruits to be included on each plant.

AMAP lets users save and export plant models in DXF and native Turbo 3D formats.

AMAP is available for an introductory price of \$1,200 through Jan. 31.

View by View Inc. is at 1203 Union St., San Francisco, Calif. 94109. Phone (415) 775-6926; fax (415) 923-1205. □

CompassPoint is finding its way to the network

By Carolyn Said

Berkley, Mich. — Northpoint Software this month announced a network-server version of its CompassPoint image-management system.

CompassPoint Server, due in March, will allow an unlimited number of users to share photos, graphics and QuickTime movies

over a network simultaneously, the company said.

Based on 4D Server from ACI US Inc. of Cupertino, Calif., CompassPoint Server will let users perform several operations at once, such as sorting images while printing a history report on its use.

Both the stand-alone CompassPoint, which shipped late last

month, and the server-based version offer a feature called Navitrack that tracks image use.

Navitrack prompts users to enter when and how they use images, then automatically records where images are located, where they have been used, and who currently is using them.

The programs display thumbnails that users can double-click to launch the originating applications. Users can search images by multiple criteria; a three-level security system helps prevent unauthorized viewing or use of images.

The programs come with the Image Filing Tutor, which provides instructions on setting up and maintaining an image filing system.

The single-user CompassPoint and CompassPoint Server list for \$749 each. CompassPoint Server requires ACI US' 4D Server, which costs \$1,495 for three users, \$6,495 for 25 users and \$15,000 for unlimited users.

Northpoint Software is at 2200 W. Eleven Mile Road, Berkley, Mich. 48072. Phone (313) 543-1770; fax (313) 541-1858. □



CompassPoint, an image-management system from Northpoint Software, offers a feature called Navitrack that tracks down where images are located and who is viewing them.

RISC

From Page 28

two RS-232 serial ports.

CZAR comes bundled with Torque Systems Inc.'s Tuplex software, which runs complex tasks on the RISC board. Users can access the CZAR board through the Chooser with Tuplex.

Tuplex lets the board run 5-D

Ltd.'s JAWS, a PostScript Level 2-compatible interpreter, available for less than \$800. Adobe Systems Inc. this spring is expected to announce a version of its Level 2/CPSI (Configurable PostScript Software Interpreter) that runs on the IDT board.

CZAR also runs VideoBits' software for Strata Inc.'s StrataVision 3d, which uses the board to ray trace

at up to 12 times the speed of a Quadra 950, Torque said.

Integrated Device Technology Inc. is at 2975 Stender Way, Santa Clara, Calif. 95054. Phone (800) 345-7015; fax (408) 492-8674.

YARC Systems Corp. is at 975 Business Center Circle, Newbury Park, Calif. 91320. Phone (805) 499-9444; fax (805) 499-4048. □

Polaroid Pro Presenter DP-2000 shows 24-bit color, live video

By Nathalie Welch

Cambridge, Mass. — Polaroid Corp. this month announced its new LCD projection panel, capable of presenting Mac images in up to 16.7 million colors.

Professional Presenter DP-2000, available now for \$5,995, is based on active-matrix TFT (thin-film transistor) technology and provides 640-by-480-pixel resolution.

Polaroid's \$1,195 optional video adapter can be used with the panel to make it compatible with NTSC, PAL (a European standard) and SECAM (French) video signals. The adapter also lets the panel handle S-video and composite video sources such as VCRs, TVs and camcorders.

The panel projects 32,000 colors from live video or scanned sources, according to the company.

The video adapter also provides a stereo amplifier to directly drive standard loudspeakers.

The Professional Presenter DP-2000, which weighs about 5 pounds, is designed to rest on top of an over-



Professional Presenter can display computer images in up to 16.7 million colors.

head projector. It is compatible with the on-board video of Mac II machines, Mac LCs, Quadras, and PowerBook 160 and 180 models.

Polaroid Corp. is at 575 Technology Square, Cambridge, Mass. 02139. Phone (617) 577-2000 or (800) 225-1618; fax (617) 494-0249. □

CD-ROMs show off new images

By Kirsten L. Parkinson

San Francisco — From nature scenes to Jimmy Stewart, images in new CD-ROM collections offer a range of options for enlivening presentations and publications.

► **Alpha Technologies Group Inc.** is distributing the \$249 ClipTime Volume II: American Media, a CD-ROM collection of Americana images.

The disc includes 300 QuickTime movies of U.S. presidents, American landscapes, and historical and military events; 50 24-bit-color PICT photos of national parks; and 80 songs and sound effects in QuickTime format and AIFF (Audio Interchange File Format).

ClipTime Volume III: Hollywood Classics will be a collection of

QuickTime clips of well-known movies, such as "It's a Wonderful Life" and "Beat the Devil." It will ship in April for less than \$100.

The price of ClipTime Volume I also was cut to \$99 from \$199.

► **Digital Gallery Ltd.** next month will ship its second collection of 20 TIFF color photos. The first edition now is shipping. Each \$150 disc includes landscape, pastoral and cityscape scenes digitized at 350 dpi.

Alpha Technologies Group Inc. is at 6921 Cable Drive, Suite 100, Marriottsville, Md. 21104. Phone (410) 781-4200; fax (410) 781-4963.

Digital Gallery Ltd. is at 4422 S.W. Corbett, Portland, Ore. 97201. Phone (503) 224-4566 or (800) 828-6369; fax (503) 223-5386. □



ClipTime Volume II: American Media includes 300 QuickTime movies of U.S. presidents, places and events, such as this clip of the flight deck of an aircraft carrier.

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New Media STEVE ROSENTHAL

Bring that to the Mac, Sega

I've just seen what could be the most amazing multimedia peripheral for the year, but unfortunately we'll need to convince game-maker Sega of America Inc. to bring it out for the Mac.

As demonstrated by Sega to steady crowds at the recent Consumer Electronics Show in Las Vegas, the Activator is an "under \$80" infrared body-movement sensor designed to control action games. The user stands in a

3-foot-wide, almost-flat, plastic octagon that sends up vertical curtains of invisible light along each side. Movements that break any of the beams create coded signals indicating the side and level.

Naturally, the Sega version won't work directly with a Macintosh. But Sega used to make Macintosh games and still professes an interest in the Mac market. When I asked Paul Rioux, Sega executive vice president, about this possibility, he said his

company might be persuaded to make a Macintosh version after the newest version of the Activator appears on the Sega later this year.

Actually, though, I ended up trying very hard to dissuade him from doing that. Instead, I want Sega to make a 5-inch, multimedia-oriented, hand-movement version that would sit on your desktop. It appears possible; the developer of the Activator, Light Harp of America of New York, told me there would be no significant technical or cost problems building such a desktop version. You'd need a Mac-based controller and a few upgraded chips to give each sensor 64 elevation levels instead of the two used for the Sega whole-body version. But, Light Harp said, the added cost might be balanced in whole or part by the savings from using a smaller ring.

The Activator is an
"under \$80" infrared
body-movement sensor
designed to control
action games.

Just think of it. Rather than being tuned for large body movements, this device could sense an open or closed hand, forward or backward movement, hand rotation in two dimensions, and elevation. Two orthogonal sets of sensors looking like bookends might clutter your desk a bit, but they would give you all six axes of gestural information (three translation and three rotation).

In effect, this minisensor would deliver most of the gestural inputs provided by expensive glove-sensor input devices or 3-D pens, in far more convenient but lower-cost form. Plus, you wouldn't have an awkward delay each time you put on the glove, or any strings and wires becoming tangled, or any bar to pick up, or any ultrasonic or radio-frequency energy to shield out (very low-level infrared is believed to be safe).

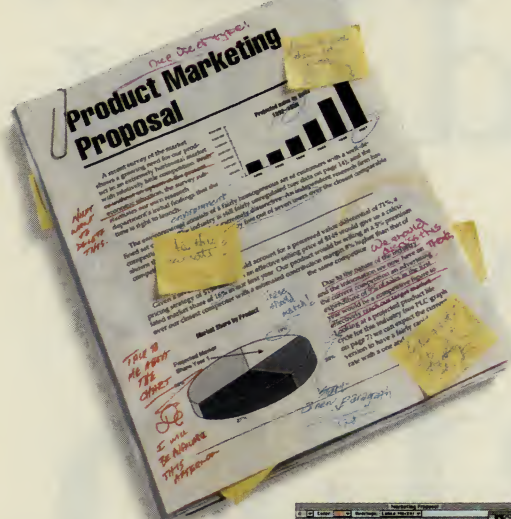
The first uses might be direct replacements for current mouse-and-click motions. Later, we could develop a wider range of gestural languages, from simple stop-and-go hand signals to the rich set of motions used by a symphonic conductor.

The possible applications for live, multimedia presentations and performances are easily imagined. But you also could use this kind of gestural language for controlling multiple variables that go into preparing a multimedia presentation or for grabbing, setting or moving values in productivity applications.

Furthermore, if we can convince Sega to get back into the Mac business, there will soon be other hardware goodies to wish for. Later this spring, Rioux says, his company plans to release a "virtual reality helmet" for about \$200. Watch this space for more details. □

Send tips and comments to Steve Rosenthal, c/o MacWEEK, 301 Howard St., 15th Floor, San Francisco, Calif. 94105; AppleLink: Steve.R; MCI: 114-8611.

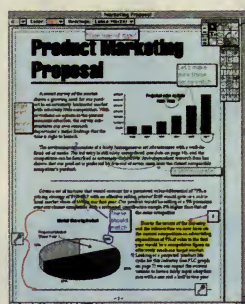
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You've put a lot of work into that document. Now you just need to show it to a few people, get their comments, and it will be golden. Unfortunately, this usually means passing out copies to each reviewer in a group, then waiting to get the copies back, only to end up with a stack of papers covered with scribbled marks and little stick-on notes. So much for feedback.

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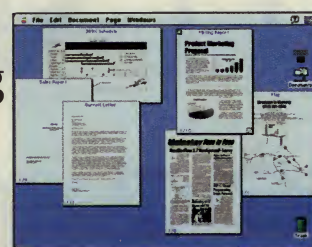
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*"The recently
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is the news of the
day in Mac e-mail."*
MacWEEK August 3, 1992

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cc:Mail has a powerful Message Finder that lets you search through all your messages according to subject, text, address, date, size, priority or contents. Because privacy is important in business communications, cc:Mail encrypts your messages so that only the recipient has access. Quickmail, on the other hand, doesn't encrypt messages so virtually anyone can read your mail. And cc:Mail was designed to grow with your organization, so you can easily have 5 to 500,000 users.

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Here's what else the editors
of MacWEEK said:

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"Actions that a mail user performs frequently—creating a new message and reading the latest message—are always a click away."

About the competition:

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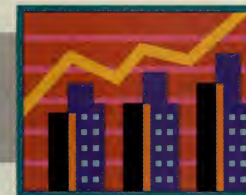
"QuickMail was the only package whose mail server crashed during testing... (its) spotty reliability for Macs and PCs was the primary impetus for the upgrade... so this evidence of continued problems concerns us."

Lotus

cc:Mail for Macintosh

BUSINESS WATCH

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Apple, IBM on different paths

Financial results bode ill for Big Blue

By Jeff Ubois

Armonk, N.Y. — Longtime rivals and recent allies Apple and IBM Corp. appear headed in opposite directions as they announced their financial results this month.

While Apple set new records, at

least in terms of gross revenues, IBM posted the largest quarterly loss in U.S. corporate history and struggled to halt a virtual free fall in its stock price, which has dropped more than 30 percent since early December.

"IBM sees its salvation in focusing on corporate services, while Apple is focusing more on consumer products and perhaps even information services," said John Rossi, an analyst with Robertson, Stephens & Co. in San

Francisco. "Apple is more forward-thinking, while IBM is just reacting."

In the battle for the desktop, both companies posted strong gains in unit shipments, but in both cases slimmer margins resulting from price wars eroded earnings.

"Apple's results were good, but considering production and sales levels, the earning power of the company was just a little bit disappointing," Rossi said.

Apple's sales for its first quarter of fiscal 1993, ended Dec. 25, 1992, jumped 7 percent to \$2 billion, but profits fell to \$161.3 million from \$166 million over the same period a year ago. Total Macintosh unit shipments were up 31 percent. The

See Results, Page 36



NEVIN BERGER

Trends

Mac crime wave hits Big Apple; bandits leave police perplexed

By Phyllis Orrick

New York — Jonathan Reiser still can't shake the feeling he got when two gunmen herded him and two customers into a closet of the computer store here in which he worked. The robbery, which took place in March 1991, netted the bandits goods worth several thousand dollars — in the form of Macs.

He didn't know it at the time, but Reiser, who quit his sales job and is now a Mac consultant, was a first-hand witness to a growing phenomenon: Macs thefts.

Indeed, Mac banditry has New York police perplexed. Not only are they having trouble stopping the high-tech crime wave, but "most can't tell a Mac from an IBM clone," said one law-enforcement official who requested anonymity.

An informal survey of the city's largest Mac service bureaus, consultants and users reveals the wide-

spread theft of Macs in the Big Apple.

A supervisor at a Manhattan computer dealer said that among her nine salespeople, "at least once a month I'll hear someone say a client's been robbed."

The numbers. At least \$1.5 billion in Apple computers, printers and monitors was stolen in the United States last year, according to the Stolen Computer Registry, a nonprofit organization based here. In all, \$10 billion in computer hardware was pilfered — a fourfold increase over 1991 (see MacWEEK, Nov. 23, 1992).

PowerBooks especially are coveted because of their portability, performance and high resale value, according to the organization. And once a site is hit, the thieves are likely to return in a few months to steal the new equipment.

See Thefts, Page 36

Another loss for Symantec

By Andrew Gore

Cupertino, Calif. — As predicted by analysts, the once high-flying Symantec Corp. posted another loss for its most recent quarter.

The company lost \$4.1 million for its 1993 third fiscal quarter ended Dec. 31, 1992, compared with net income of \$6.6 million in the year-ago quarter. The loss included charges for the acquisition of Certus International Corp., a developer of network-based security software. Not including acquisition costs, Symantec's third-quarter loss for fiscal 1993 was \$2.1 million. This follows on the heels of a \$5.9 loss for its second quarter of fiscal 1993 ended Oct. 2, 1992.

The company's revenues for the third quarter were \$48.7 million, down \$9.3 million from the previous year's quarter. Third-quarter revenues, however, up 9 percent over the second quarter.

Symantec has acquired about a dozen companies in its eight-year history, including the 1991 merger with PC utilities giant Peter Norton Computing Inc. This rapid, and according to some observers haphazard, acquisition strategy had fueled a 50 percent per quarter sales-growth rate for the eight periods preceding the second quarter of fiscal 1993.

Analysts predicted that Symantec will regain its balance by the fourth quarter, at which point they predicted the company would break even. □

Microsoft's profits jump 35%; Mac, Windows sales flourish

By Lisa Picarille

Redmond, Wash. — Behind the continuing Windows boom as well as a trio of Mac application upgrades, Microsoft Corp. last week reported nearly 40 percent increases in sales and profits for its 1993 second quarter, which ended Dec. 31, 1992.

The software giant cited record sales of Mac applications as a significant reason for the earnings jump.

During the just-completed quarter, Microsoft shipped PowerPoint 3.0 for the Mac, the long-awaited update of its presentation graphics program. In addition, Microsoft delivered Microsoft Word 5.1, an upgrade to its top-selling word processor, and Microsoft Works 3.0, a new version of its integrated program.

The company's sales for the quarter rose 38 percent to \$938 million, compared with \$682 million for the same period a year ago. Rev-

enues for the first half of fiscal 1993 were \$1.76 billion, up 39 percent from last year.

Meanwhile, second-quarter profits rose 35 percent, from \$175 million to \$236 million. Earnings for the first half of fiscal 1993 rose 39 percent, to \$445 million from \$319 million during the same period a year ago.

The company made 78 cents per share for the second quarter, compared with 60 cents for the same period last year.

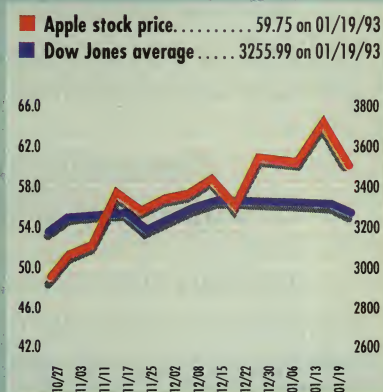
Frank Gaudette, Microsoft executive vice president and chief financial officer, also said the record sales reflected strong demand for its Windows 3.1 operating system and a 50 percent increase in sales from application programs.

In the past three months, the company has introduced a new database program called Access and an updated version of its FoxPro database. □

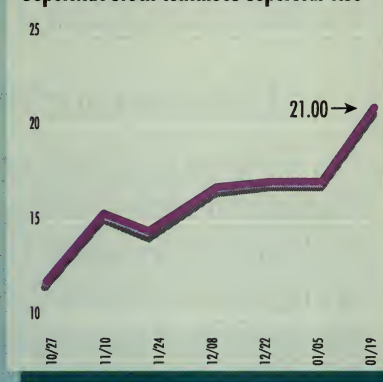
Stock Watch

	01.19.93 CLOSE	WEEKLY % CHANGE
Apple	59.75	-5.91
SOFTWARE DEVELOPERS		
Adobe	39.50	-1.86
Aldus	14.25	5.56
Caere	20.38	3.16
CE Software	3.50	-8.95
Microsoft	88.38	-3.15
Novell	29.75	-4.03
Symantec	12.75	4.08
PERIPHERALS VENDORS		
CMS	3.00	9.09
HP	72.13	1.23
Mass Micro	0.69	10.08
QMS	12.88	0.98
Radius	5.13	-2.38
RasterOps	8.00	16.36
Sigma	7.13	-1.72
SuperMac	21.00	18.31
STORAGE		
Conner	20.25	-4.71
Maxtor	10.63	-4.49
Quantum	15.00	2.56
Seagate	16.88	-6.25
SyQuest	23.50	11.90
INDUSTRY INDICATORS		
DEC	40.63	16.07
IBM	48.38	1.31
Motorola	61.63	9.56
Sun	36.75	-1.67
Dow Jones	3255.99	-0.23

Compiled by Nordby International Inc.



SuperMac stock continues superstar rise



SuperMac Technology is beginning to look like the Mac industry's unstoppable stock. Since going public last May, the company's shares have experienced a rally that landed them at an all-time high of

\$21.50 as of last Monday. As of the market close last Tuesday, the stock had dipped only slightly to \$21 a share, which was still up more than 18 percent from the previous week.

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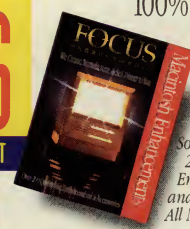
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New QuickKeys promotion pays resellers

By Robert Hess

West Des Moines, Iowa — CE Software Inc. hopes to get its macro utility QuickKeys into the hands of more users with a new promotion that pays local resellers even if the

customer doesn't buy the software through them.

Called QuickKeys Test Drive, the promo software offers the same features as the commercial QuickKeys but limits the number of macros a

user can create and the macros a user has access to at one time. It also expires after six months of use.

Test Drive will be available from local dealers, value-added resellers, user groups, on-line services and direct from CE Software. Any time a user upgrades to the full version for \$89, their local reseller will receive a commission, even if the user got the software through a user group or on-line. QuickKeys lists for \$149.

Mark H. Anbinder, technical-support coordinator at Ithaca, N.Y.-based Baka Computers, said the Test Drive "would help move a product otherwise hard to push. This makes it easy for a user to see QuickKeys, use it for a while and get used to it." In the past, he said, there wasn't as much incentive to distribute demos since the user could buy the software from any reseller without the original dealer receiving credit. □

Results

From Page 34

company managed to cut operating expenses to 28.5 percent of sales — the lowest in seven years, according to CEO John Sculley. Gross margins, however, fell from 43.7 percent to 40.5 percent.

By contrast, IBM suffered a net loss of \$5.46 billion for its 1992 fourth quarter, which ended Dec. 31, 1992, compared to a loss of \$1.46 billion in the same period a year ago. Both figures include restructuring charges. Revenues for the quarter were \$19.56 billion, an 11 percent decrease from \$21.97 billion in the year-ago quarter.

For the year, revenues were down 0.4 percent to \$64.52 billion from 1991's \$64.77 billion. After accounting charges in 1991 and 1992 related to restructuring, IBM posted a loss of \$4.97 billion, compared to a loss of \$2.86 billion in 1991.

While IBM's hardware sales dropped 9 percent between 1991 and 1992, services revenues jumped 31.7 percent.

"IBM's major problems are really at the high end," said Wendy Abramowitz, an analyst at New York-based Argus Research Inc. "Its PC unit shipments were up strongly, but revenue was flat because of price cutting." □

Thefts

From Page 34

One office employee said that on the advice of his insurance company, he has stored \$20,000 worth of Mac equipment in a closet because he was told the thieves would be back. He hasn't used the equipment for several months.

Although industry observers are baffled as to where the stolen Macs and IBM PCs and compatibles end up, many could be landing in the loosely organized market for used equipment that has proliferated with electronic bulletin boards and ad hoc computer user groups.

There also may be a network of "secondary market" dealers and service bureaus trying to shave expenses on what can be costly maintenance contracts. Several low-budget computer stores that have popped up in the outer boroughs could be another hotbed of stolen equipment.

The law. Meanwhile, law-enforcement officials appear helpless to stop the epidemic.

"The FBI was no help. The National Crime Center (in Washington, D.C.) couldn't help us. The local police are in a quandary," said Robert Zises, president of New York-based National Computer Exchange, which tracks stolen computer equipment for resellers and law-enforcement officials nationwide.

It maintains a database of serial numbers, makes, models and configurations of stolen CPUs. "If a theft is reported in one precinct, the precinct next door doesn't know about it."

In New York, for example, there is no computer-theft unit; robberies are handled precinct by precinct. The thief would have to sell the computer in the same precinct he stole it in for the police to track down the CPU, according to a New York Police Department spokesman.

The victims. Zises said he hears mostly from large corporations, which lose computers from pilfering and fraud rather than from robbery and burglary. And with "something like 55 million microcomputers in the United States," he said, "there is plenty of cover for people peddling used machines of dubious legality." He said that 10 cities — in particular, New York, San Francisco and Los Angeles — are choice territories for Mac bandits.

"Wherever you have Fortune 1,000 companies that absolutely eat up micros and laptops, you're going to find a ring [of Mac thieves]," Zises said.

Programmers and manufacturers have yet to devise any practical method of thwarting thieves, aside from bolting down their machines.

That's the route that Tim Hunter, owner of one of New York's oldest service bureau chains, ultimately chose. His two stores were robbed three times in 1991.

Hunter also moved one of his stores to a less vulnerable location, installed more elaborate alarm systems and trained his staff in anti-crime techniques. He said the precautions paid off recently, when his employees spotted a pair of would-be thieves and ran them off.

"We have jewelry-store security," he said. "There are a few gimmicks on the market. You can actually jolt a person by remote [control]. And there's a thing where if you move [a Mac], a siren goes off."

That doesn't come as much consolation for Reiser. When he recently set up an office on West 22nd Street, he bought a new Mac LC. Shortly thereafter it was stolen. □



Business

BRIEFS

Frame Technology to acquire Verity

San Jose, Calif. — Frame Technology Corp. this month announced an agreement to buy Verity Inc. for about \$52.1 million in stock.

The publishing software developer, based here, said it will issue about 3.5 million of its shares to acquire Mountain View, Calif.-based Verity, a privately held company that specializes in document-retrieval software.

Paul Robichaux will serve as chairman and CEO of the combined companies; Michael Pliner, Verity president and CEO, will serve as an executive consultant to Robichaux during the transition.

Shareholders still must approve the deal.

News of the acquisition sent Frame's stock up 38 cents to \$14.88 per share in NASDAQ trading.

SyQuest announces record revenues, income

Fremont, Calif. — SyQuest Technology Inc. this month announced record revenues and net income for the first quarter of its 1993 fiscal year.

During the three-month period, which ended Dec. 31, 1992, the company's net revenues were \$50.7 million, up 29 percent from the same period a year ago. Net income nearly doubled to \$4.5 million, from \$2.3 million in last year's first quarter. Earnings per share were 35 cents, up from 22 cents.

SyQuest said its gross margins jumped to 37 percent from 31 percent a year ago. The company cited an increase in the proportion of its net revenues derived from sales of cartridges, which provide higher margins than its drive mechanisms.

SyQuest has recorded 17 consecutive profitable quarters.

MacSciTech, Mac consortium agree to merge

Worcester, Mass. — The Macintosh Scientific & Technical Users Association (MacSciTech) and the Consortium for Laboratory & Industrial Applications of the Macintosh have agreed to merge under the umbrella of the larger MacSciTech organization.

The consortium, which had acted as a marketing association for hardware and software developers, will become the Developer Advisory Council of MacSciTech, and its executive director, Shari Worthington, will become the new executive director of MacSciTech.

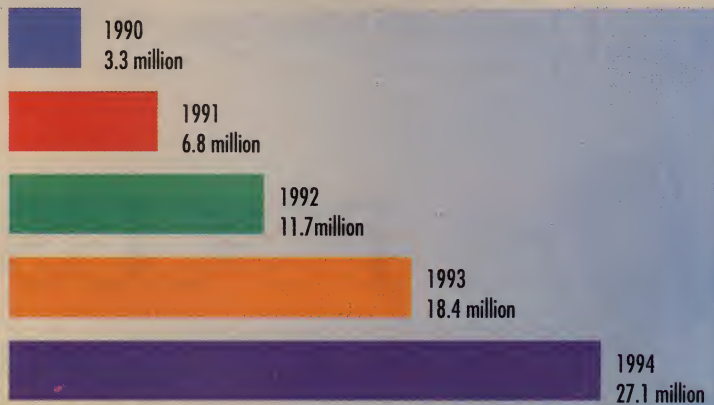
MacSciTech, founded in 1991, publishes the bimonthly SciTech Journal, membership and technical product directories, and technical applications on CD-ROM. It also hosts two regional conferences as well as user and developer forums.

MacSciTech is at 49 Midgley Lane, Worcester, Mass. 01604. Phone (508) 755-5242; fax (508) 795-1636.

MacWEEK index

THE MESSAGE IS IN THE MAIL

The total number of LAN-based users on electronic mail is expected to more than double by 1994.



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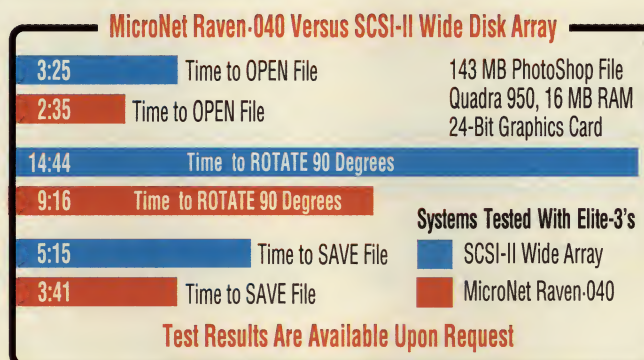
Real World Tests Show MicroNet's Raven·040 Disk Array Continues as the Performance Winner!

Mitch Krayton, President of Digital Resources, knows that to compete in the real world of graphics and pre-press, he has to sell the best performing, and most cost effective systems to his clients.

"It's easy to claim your system is the fastest, the simplest to use, or the most cost effective, but to convince my clients in this competitive field, I need to know the truth behind the claims, so I decided to run my own tests."

In head-to-head competition MicroNet's Raven·040 disk array proved its reputation as the winner of the MacUser Eddy Award for Best Storage Product of 1991.

"We found that the Raven·040 outperformed a similar capacity SCSI-II Wide Disk Array by at least one-third in real world tests. The Raven·040 was directly bootable out of the box, requiring no special INITs or mounting software.



"By using both internal SCSI ports of a Quadra 950, MicroNet's disk array left the PDS and all NuBus slots open for further expansion. The Raven·040 has been Production Proven™ for our clients for more than a year."

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EDITORIAL

Modem delay crippling Duos

A PowerBook without a modem is like a political campaign with no funds: It may be full of brilliant ideas, but they don't have much impact because there's no way to get them to the intended audience.

No one knows that better than PowerBook Duo users. More than three months after it began selling the lightweight notebooks, Apple has yet to deliver the Express Modem cards it designed for them. And no third-party vendor has released or even announced a Duo modem, either — in part, developers say, because Apple has not yet provided documentation about the new model's application programming interface.

That means Duo adopters today have three choices when they take to the road: carry an external modem; hope to find a site where they can transfer files to a machine with a modem; or expect to remain incommunicado until they return.

Obviously, none of these is satisfactory; indeed, they make a mockery of Apple's claim that the Duos offer "the

best of both worlds," of desktop and mobile computing. In addition to the Express Modem, the Duo MiniDock also is still unavailable, and none of the third-party docks is shipping. Duo pioneers have had to settle for compromised computing for much too long.

Apple hasn't said what's delaying the modem, but the whole problem appears to be a case of technological hubris. First, the Duo's developers produced a design that left room for only the tiniest of modem cards. Then the company abruptly abandoned plans — included in documents distributed to developers as late as last summer — for a 2,400-bps modem, in favor of a higher-performance device. And Apple's engineers apparently tried to do it all themselves, despite the company's abysmal record in modem design.

At this point, Apple owes current Duo users and potential buyers a realistic statement of when they can expect the modem. And if the company expects customers to go out on a limb with its new technologies, it's got to learn to get all the key pieces in place on time. □

Commentary

Apple playing a dangerous game with OS gambit

Some critics respect nothing. Unmoved by Apple's impressive market share gains and terrific PowerBook sales, they claim Apple's system-software efforts leave a lot to be desired. To them, little has happened since System 7, itself too boring and too late.

These exacting examiners contend the situation is made worse by loose lips in Apple's executive wing.

Unfortunately, industry observers might have a point. Pronouncements over the nature and future of Newton, Taligent (nee Pink) and almost any recently announced system-software toolbox, have been a bit disorganized. Important system-software components such as AOCE (Apple Open Collaboration Environment) and QuickDraw GX have been in vapor for eons (QuickDraw GX has been on the drawing board for five years), and official "course corrections" have been disingenuous to say the least.

But, in the end, the alleged sins of speaking too soon and delivering too late might not matter.

Futures shock. In the first place, one has to be pragmatic, or perhaps cynical, about premature statements. They work. Consider the impact Newton stories had on the general public. Ideas about what the product is actually good for are a bit hazy, but the Apple logo and its association with an entirely new class of computing devices aren't.

Also, Apple is under tremendous pressure to discuss futures. Imagine a world where Apple discussed its products only from the day they shipped. Columnists would be reduced to writing about the facts!

Speaking of reality, Apple is well aware of this media game: If the product sells after it ships, all will be instantly forgiven.

System-software shuffle. However, Apple is playing an unusually difficult game with its system software, one that will require the balance and timing of a trapeze artist to pull off.

The Mac must gain more power to survive. It did with QuickTime; it will with QuickDraw GX, AOCE and Casper. To feed these mips-hungry toolboxes, the Mac will have to move to a new high-speed platform, meaning a new instruction set, with all the compatibility, porting and emulation issues imaginable.

Better application programming interfaces, better operating system services and a move to a new processor are all challenging by themselves; successfully executing all three

simultaneously has never been done.

To make matters worse, it doesn't seem the company has much choice in its system-software gambit. Staying with Motorola doesn't make much sense when looking at the progress Intel is making. Not improving OS technologies as it makes the move to PowerPC would expose the company to marketing a mere port of the current Mac on faster hardware. History shows the market doesn't take too kindly to these.

The move to PowerPC appears to be in decent shape. Recently, developers who came to look at the chip came out impressed by the performance and the level of application software compatibility. We know about demos, we know the "last 10 percent" of the task might take 90 percent of the time, but this is encouraging nonetheless.

As noted, nobody has quite ever played this game at the level of difficulty Apple has set for itself. But, for all its troubles, it is a fair course for the company to be following, especially since its many past mistakes have forced this strategy upon it.

The goals are clear, the rewards are high and, no matter what the critics say, if the products sell, everyone will be happy. □



JEAN-LOUIS GASSÉE

LETTERS



A letter to Sculley: Here's my money, so give me my Mac

The following is a letter to Apple CEO John Sculley:

I have spent four hours during the past few days calling all over the New York metropolitan area (including New Jersey and Connecticut) in a fruitless attempt to find a retailer with a Performa 600CD in stock. I've lusted after a Mac for my home ever since I toyed with a friend's Plus about five years ago.

Now, when I can finally afford one (albeit only after winning big on a game show), I find that I must wait for up to seven weeks to purchase the model I want. From what I read in the trade press, the back-order situation is much the same with Apple's newer PowerBooks, Quadras and other models.

Mr. Sculley, it appears that your hotshot executives managed to get their MBAs without ever taking Economics 101. If they had, they would have learned about a fundamental business concept known as supply and demand. It is ludicrous that your company can create a product that so many people want, but it cannot master the logistics required to get that product into the hands of consumers willing to pay good money for it.

Were it not for the fact that I've already sunk \$1,000 into Mac peripherals and software, I would take my money and head to the nearest PCs-R-Us to buy a 486 PC and a multimedia upgrade kit. A PC might not be as easy as a Mac to set up and use, but it would be significantly cheaper, and I could take it home with me.

Chuck Will
Fishkill, N.Y.

TraqNet, InfoKey/InfoCard also define dial-up security

I write in response to the story "ARA mobile in '92, PDAs in '93" (MacWEEK, Jan. 4). LeeMah DataCom Security Corp. takes exception to the comments mentioning Security Dynamics Inc. as defining the high end of dial-up security.

LeeMah's TraqNet and InfoKey/InfoCard solution has been tested with both the Shiva and Cayman products, and they are in use protecting Apple networks at various companies, including Apple, Lockheed and Genentech.

LeeMah's solution requires no Unix workstation, no modification of AppleTalk Remote Access (ARA) software or hardware and is considered by many security experts to be the more secure solution than Security Dynamics' products. LeeMah's TraqNet and InfoKey products have been proven to secure systems in several "hacker challenges" under the scrutiny of major accounting firms, including Coopers & Lybrand and Peat Marwick Mitchell.

The story's mentioning that ARA can't dial back in various situations is right on the

money. Any discussion of dial security helps readers understand some of the issues that need to be addressed.

Steve Kruse, senior security consultant
LeeMah DataCom Security Corp.
Hayward, Calif.

Has Apple taken wrong turn with new System Enablers?

Everything comes with a cost. One of Apple's recent announcements was the use of System Enablers to fit the increasingly less compatible new Macintoshes to System 7.1. Just drop these into the System folder and off you go. At least that's Apple's story.

In fact it will no longer be enough to install the latest system software on your external hard drive or cartridge. Without the special Enabler for a new Mac installed in your system, the drive will not start up the computer.

Change computers and you will have to reinstall a new system (Apple's recommendation to me). We all know how fast, convenient and easy that is. Especially as Apple is not making the System Enabler disks freely available. Nor, after examining the Enabler file, is it obvious for which computer it has been installed. When you're finished you can look forward to reinstalling your system all over again.

Apple has created yet another headache for administrators as well as support staff and anyone who needs to move a specially configured system and software around. I lost a day and a half on this fool's errand. Anyone who has set up a rescue drive to resuscitate crashed computers will have yet another spoke thrown in the wheel of recovery.

Apple has taken a wrong turn somewhere. The average user's rapidly ballooning System folder is now a garbage dump of old, unused and inappropriate software. Has anyone who has looked in their System folder lately been able to say with certainty that everything there should be there, and that it isn't causing some hidden problem or, as in this case, a lot of trouble because Apple hasn't thought the "solution" through?

Peter Breis
Yarralumla, Australia

We haven't tested the System Enablers on all CPUs, but our experience indicates that multiple Enablers can coexist in the same System folder. So you might be able to create that universal start-up disk after all. Current versions of the Enablers are available on AppleLink and on Apple's Internet-accessible FTP (File Transfer Protocol) server. — Ed.

Send letters to MacWEEK, 301 Howard St., 15th Floor, San Francisco, Calif. 94105. MCI 323-1203; fax (415) 243-3650. Include your name, address and phone number. Letters should not exceed 300 words. We reserve the right to edit for clarity and length.

The Mac Manager

Apple busy overpromising, underdelivering the goods



DON CRABBE

If Mac managers treated their clients the way Apple treats its customers, they would be fired in a New York minute, and deservedly so.

Consider the following behaviors. With pride and great gusto, Apple announces the PowerBook 160 and 180, the Duo 210 and 230, the Quadra 950, the LaserWriter Pro 610 and 630, the Apple Color OneScanner, and the AppleCD 350 CD-ROM drive. In each case, the products can't be had in a timely manner for love or money.

Meanwhile, consider that the StyleWriter I and II, the Performa 400/LC II, and other consumer Mac products generally are available.

What's going on here? Why is it so difficult for Apple to manufacture its most popular business products in quantities to meet the needs of its business customers? Unfortunately, Apple's fallen into the deadly trap of overpromising and underdelivering its products. A trap, by the way, that surely any self-respecting Mac manager knows how to avoid.

Batter up. I just don't get it. I know that predicting customer demand is anything but an exact science and that manufacturing operations can't be made to start and stop on a dime. But come on, Apple isn't even close.

If Apple were taking an operations class in business school and running a business simulation, it would be flunking right now.

We don't expect Apple to bat 1.000 all the time, but it at least has to start getting a few into fair territory with its production capacity and estimated sales.

For example, how could Apple not know that the new PowerBooks and Duos would be tremendously popular? It's not like it

didn't have the sales data for the 140, 145 and 170 to go on.

And the Quadra 950? Apple has seen the demand for 700s and 900s, so how could it not anticipate demand for the 950?

Maybe it's time that Apple consider more than just Sony and Taiwan's Acer Corp. as offshore CPU manufacturing partners.

Lessons to be learned. Yes, I admit that it's embarrassingly easy to slam Apple on its crummy availability record, so I'll stop for now. Instead, let's consider Apple as a case study (returning to our business-school metaphor) for us.

As Mac managers, we're asked to do pretty much the same kind of things each day by our clients and staffs that Apple is asked to do by its customers: deliver "stuff" that works perfectly, costs as little as possible and makes everyone using it happy.

Substitute "computers" for "stuff" and you've described Apple's problem. Change "stuff" into "IS solutions" and you have the Mac managers daily lament.

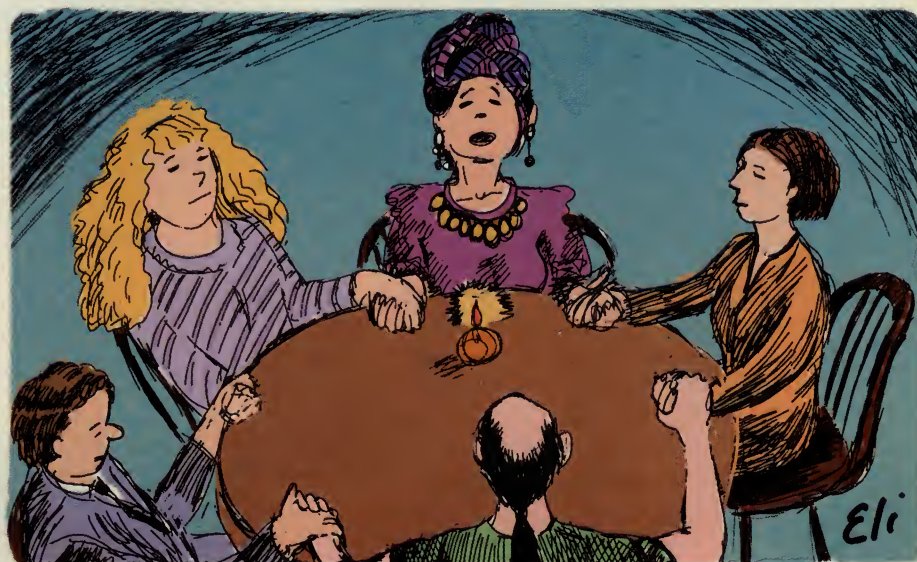
What can we learn from these mistakes?

► Plan before you promise. Apple has completely dropped the ball on this one. Don't follow suit.

► Do a reality check. Can you really get that database running by the proposed deadline?

► Downsize before starting. Almost every IS project, especially those involving Macs, is too grandiose. Decide on the heart of the new functionality you need and stick to it.

And finally, yes, your clients and staffers would love to have QuickTime movies in new applications, but not at the expense of timely, functioning solutions. □



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Reviews

▶ In Brief: Spiral. See Page 42.
▶ PicturePress. See Page 44.



Aldus teaches your Mac to Fetch: Cataloger keeps media files current

The program's support for workgroups and a wide variety of file formats makes it attractive to departments that need to control their media libraries.

By Michael Murie

As collections of computer-based art expand, computer artists and multimedia producers are faced with the recurring task of locating files. Aldus Corp.'s Fetch is the latest program to address this issue with a cataloging system that lets you search, view, copy or open files for editing.

And an important feature that separates the \$295 Fetch from competitors is its support for workgroups (although Aldus does not have a group pricing structure).

Installation. Our introduction to Fetch was less than pleasant. To install the program you must use the Aldus Installer, software that resembles Apple's Installer, except that it has fewer options. While installing Fetch, the Aldus Installer replaced our Scrapbook application with an older version and installed a second copy of QuickTime into the System folder, an obvious glitch.

Once Fetch is installed, the instructions suggest you install the demo catalog (a folder of files and a catalog for those files) to learn how to set up your own catalog. But because the demo catalog was created on another drive, it must be updated, which involves refinding all the sample files. Of course, they are all in the same place, but a dialog box appeared for each file asking if we wanted to find it, which quickly became tedious. (Fortunately, for System 7 users, there is an easier method of updating.)

We would have preferred that Fetch step us through the creation of a new catalog using the folder of samples.

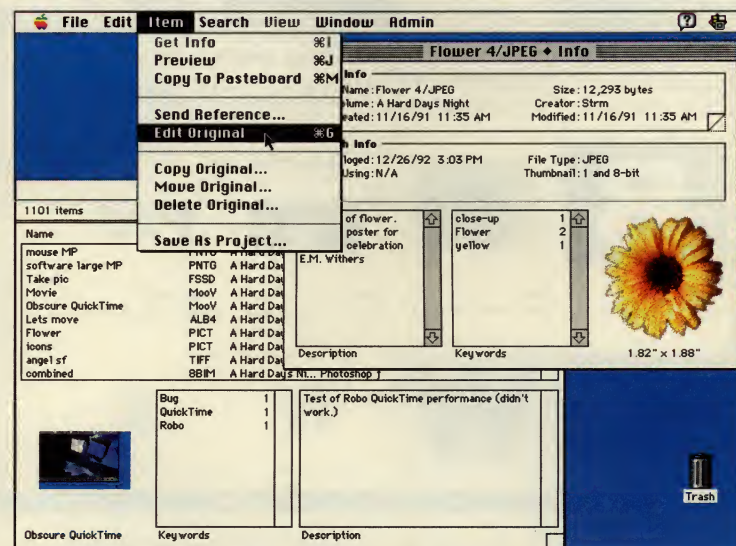
In use. When a catalog is first opened, Fetch presents a Find window to search for items in the catalog. The Find window resembles the Find window in System 7, but it lets the user specify the search for file type, file name, keyword or volume. Alternately, clicking Find All displays everything in the catalog.

Once a search is performed, the Gallery window displays the located items in one of two modes: Thumbnail or Text List view. Clicking on

an item in Text List mode displays the thumbnail representation for that item. An additional advantage is that Fetch switches quickly between the modes.

An Info window (accessed by selecting an item and pressing Command-I) displays additional information about a selected document, including location, size and date created. Both the Text List view and the Info window provide a list of keywords as well as a description of the file. Double-clicking an item in the catalog displays it in the Preview window. And if QuickTime is being used, QuickTime movies and sounds play in the Preview window.

Once a file has been found in a catalog, you can employ one



The Info window displays additional information about a selected item. Choosing Edit Original will open the selected file with an editing application of your choice.

of Fetch's several methods for accessing it.

The Edit Original command will open the file in an application you choose. The contents of the Preview window can be copied and pasted to the Clipboard. The Copy Reference command copies a

pointer to the actual file into the Clipboard. This pointer is used by Fetch-aware applications to find the original document (currently only Aldus FreeHand, PageMaker and Persuasion, as well as Adobe Illustrator and Photoshop, support

See Fetch, next page

Public Utilities shows great promise

Needs to grow to be a major contender

By R. Bradley Andrews

Data recovery is one of those areas you hope you never have to use but one that is vitally important when you do use it. Fifth Generation Systems Inc. has thrown its hat into the data-recovery ring with its recent release of Public Utilities for the Macintosh.

Although the program lacks the integrated backup of its two main competitors, Central Point Software Inc.'s MacTools and Symantec Corp.'s Norton Utilities for Macintosh, it provides all other functions needed for disk management. (It also lacks MacTools' virus-detection features.) Fifth Generation claims, however, that Public Utilities will find and fix more problems than either MacTools or Norton Utilities.

Five components comprise the \$149 Public Utilities: Prevention, Repair File, Repair Disk, Undelete and Optimize. Two Emergency disks also are included in the package, for systems 6.0.4 and 7; any of each system's main components

can be run from these disks. The Emergency disks do lack the Chooser, and therefore cannot print, but they can save output reports to any mounted disk. The manuals and the installer contain many warnings against installing Public Utilities over information you need to retrieve.

Prevention. The Prevention utility installs as a control panel designed to periodically scan mounted hard drives for errors and

to track deleted files in case they need to be undeleted.

Prevention can be set to scan at system start-up, shutdown, after a specified amount of idle time or for all three. If an idle-time scan is interrupted (by touching the mouse, for example), the scan will stop but will proceed from that same point during the next idle time.

With System 7 (or when running MultiFinder under System 6), Prevention automatically launches

See Utilities, Page 43

score card

Fetch

Aldus Corp.
Version tested: 1.0
List price: \$295
Overall value ♦♦♦♦

Fetch is a media cataloger designed for use in a workgroup environment. While cataloging media may seem like a simple task, Fetch offers some surprisingly powerful features that will be appreciated by users with many source files. Of particular interest is the capability to create sublists of a catalog (called Projects), the capability to perform complex Finds that can be saved and recalled from a menu, and support for a large number of file formats. Although the casual user will find Fetch's price prohibitive, if you work with many files and have difficulty finding them, this could be the application you have been waiting for.

Performance ♦♦♦♦
Features ♦♦♦♦
Ease of use ♦♦♦♦
Documentation/support ♦♦♦♦

RATINGS KEY

♦♦♦♦ Excellent
♦♦♦♦ Very good
♦♦♦ Good
♦♦ Fair
♦ Unsatisfactory

score card

Public Utilities for the Macintosh

Fifth Generation Systems Inc.

Overall value ♦♦♦♦ Version tested: 1.0 List price: \$149

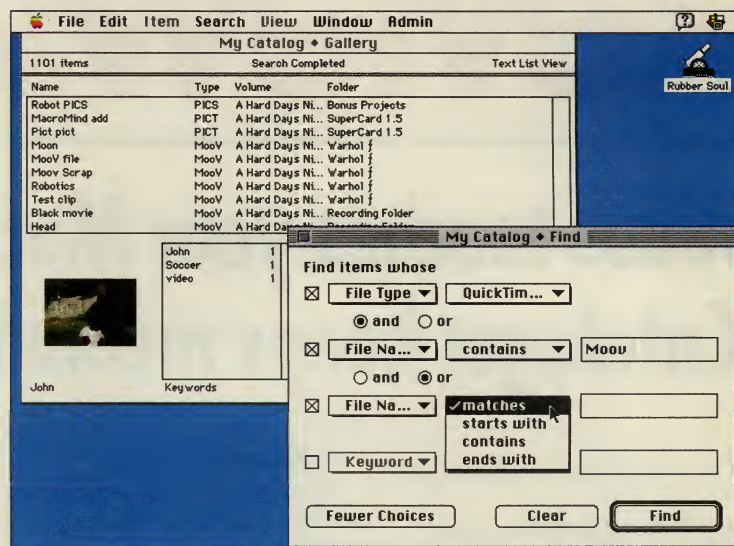
Public Utilities has great promise as a strong competitor in the disk-utilities arena, claiming to fix several problems its main competitors do not. Its capability to undelete files even after an optimization procedure is truly unique, and Fifth Generation ships (after registration) a well-done technical manual that explains the recovery process in very good detail. We encountered a few minor glitches during testing and some disk problems that it could not fix that Central Point Software Inc.'s MacTools was able to handle, and vice versa. Public Utilities has some omissions that its primary competitors offer, chiefly backup and virus detection; to be a true contender, it needs to grow a bit more.

Performance ♦♦♦♦
Features ♦♦♦♦

Ease of use ♦♦♦♦
Documentation/support ♦♦♦♦



The Gallery window in Aldus' Fetch, shown here in Thumbnail view, allows you to search for a file by type, name, keyword or volume.



The selected item in the Gallery window in Text List view appears as a thumbnail at the bottom of the window. The Find window is expanded to show the search capability.

Fetch

From previous page

Fetch). The Send Reference command works in a similar way but uses an Apple event instead to transmit the pointer. Finally, the Copy Original and Move Original commands physically copy or move a file to another location.

Adding objects to a catalog is easy. Selecting the Add/Update Items command opens the Add/Update Options dialog. Here the file types to be imported, as well as the thumbnail bit depths for the catalog, are defined. Thumbnails are displayed in one, eight or 32 bits.

Thumbnail bit depth has a direct relation to the size of the catalog. Since Fetch uses compression to reduce the size of 32-bit thumbnails, but not eight-bit ones, a catalog with eight-bit thumbnails takes up almost twice the space of a 32-bit catalog.

From the Add/Update dialog you can select a single folder or volume to add to the catalog. We would prefer being able to select multiple folders, to automate updating. System 7 users can do this with the drag-and-drop feature. Multiple items can be dragged onto Fetch's icon, and the program will ask if you want to add the items to the existing catalog or create a new one. The Add/Update dialog then appears, and Fetch adds all the items to the catalog.

If you select a folder that has already been cataloged, Fetch will update only those files that have changed. This is also the best way to update a folder that has been moved to another disk. An Exclusions file lets you create a list of files that Fetch should ignore while cataloging.

We subjected Fetch to our multimedia torture test: creating a catalog using several CD-ROM sources. This is a good test not just because it creates a catalog of more than 3,000 items; it also tests how successfully Fetch reads files from different sources. In this test, Fetch failed to read only one file. Unfortunately, it crashed when it couldn't read the file — one that Photoshop was able to read. However, the crash did not corrupt the catalog, and we were able to avoid the problem file and continue cataloging.

Every cataloger we have tested has failed to read at least one file (often different ones) and, considering the wide range of files Fetch successfully cataloged, we rate this performance as very good. Fetch supports a wide range of formats, including PICT, TIFF, QuickTime, Eastman Kodak Co.'s Photo CD, Radius Inc.'s ImpressIt JPEG and RIFF, as well as System 7's PICT and Text edition files.

Power users. Clicking More Choices in the Find window expands the window and lets you build complex searches. A specific search can be saved as an item in the Search window, then selected at any time from that menu.

In addition, Fetch is designed for workgroups. A catalog can be shared across the network and accessed simultaneously by different users, although only one user should try to update the catalog. A password feature can be used

to prevent others from updating the catalog, while letting them edit keyword lists and file descriptions. Fetch will mount off-line volumes to find source material, as long as the user has the correct network access privileges. Users can create Projects, files that contain pointers to the original catalog. This lets one user send another user a list of specific files in the catalog.

To use a Project, the user must have access to the catalog; once the catalog is opened the project behaves like a minicatalog, showing only the files in the project. Alternately, thumbnails and pointers can be exported and imported between

catalogs, but Fetch lets you open only one catalog at a time.

Documentation and support.

The manual is very good, and Fetch fully implements balloon help. Aldus also has a Browser version of Fetch that it will license to developers that want to bundle Fetch with their media collections. The Browser version cannot update catalogs and will not read catalogs created with the retail version of Fetch.

Fetch requires System 6.0.7 or later, as well as a machine that runs Color QuickDraw if you want to see previews. And while Fetch should work well under System 6, there are a number of features available only with System 7.0.

Conclusions. Catalogs are a necessary evil. To be useful they must be kept up to date and simple. With Fetch, Aldus provides a tool that allows both.

While we initially had a number of minor annoyances, the more we used the program, the more we liked it.

It is a pricey tool for the casual user, especially if you do not have a large library of media files, but Fetch's support for both workgroups and a wide variety of file formats makes it particularly attractive to departments that need to gain control of their media libraries.

Aldus Corp. is at 411 First Ave., Seattle, Wash. 98104-2871. Phone (206) 622-5500. □

IN BRIEF



Spiral 1.0.1

Innovative note taker suffers from interface lapses

PowerBooks are great enablers, and one of the tasks that they help is note taking in the field, be it meeting, classroom, seminar, press briefing or similar environment.

Taking notes often is very different from other common word processing tasks, particularly those performed at the desk. Spiral 1.0.1, a \$129 program from TechWorks Inc., is designed specifically for taking and managing notes. As such, it uses the metaphor of a notebook with individual pages rather than the more free-form metaphor used in word processors.

Implementing a new Mac metaphor is a task fraught with danger. While not completely successful, Spiral implements the notebook metaphor in a usable, if nonstandard, fashion. Since each page of a Spiral Notebook is discrete, standard Mac scroll bars are dispensed with in favor of the Page Navigator, a floating palette that works somewhat like the standard scroll bar but not as elegantly or as intuitively. It has two modes: Regular mode allows you to click arrows to move from page to page sequentially, and marked-page mode lets you move between marked pages sequentially. One problem we had with the Page Navigator was that sometimes clicking on a navigation button would have no effect; we would have to click inside the Notebook file, then click on the navigation palette to move to another page.

Each Notebook can be broken into sections with tabs, which appear along the right margin, just as in physical spiral notebooks. You also can place a bookmark at the top of a page to help you move to a specific page quickly. To further aid navigation, each section has a title

page, which can contain pointers to any page in the section: When you click on the pointer, Spiral takes you to the page that has that text on it. It sounds more complicated than it is; once you get the hang of it, these tools are useful for organizing notes. However, we would like to see the capability to format text on the section title pages.

The Find command includes a Select All Pages Found option, which is a great tool for a variety of organizational tasks. You can use it to search for and mark Notebook pages that contain specific text or to select all pages created on or modified after a certain date. Selected pages can be cut between Notebooks.

Since Spiral is not a word processor, it lacks a ruler, a spelling checker and other features found in word processors, but you can set the font, size and style of your text. There is an Abbreviations function that automatically will expand abbreviations you set up, which can be very helpful when taking notes.

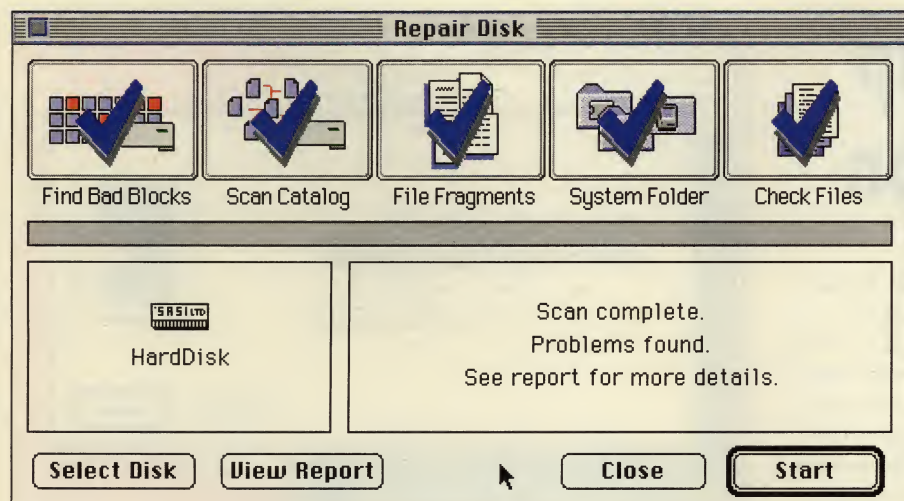
You can import and export the text of Notebooks in any of several word processing formats. The pro-

SYSTEM 7 COMPATIBILITY

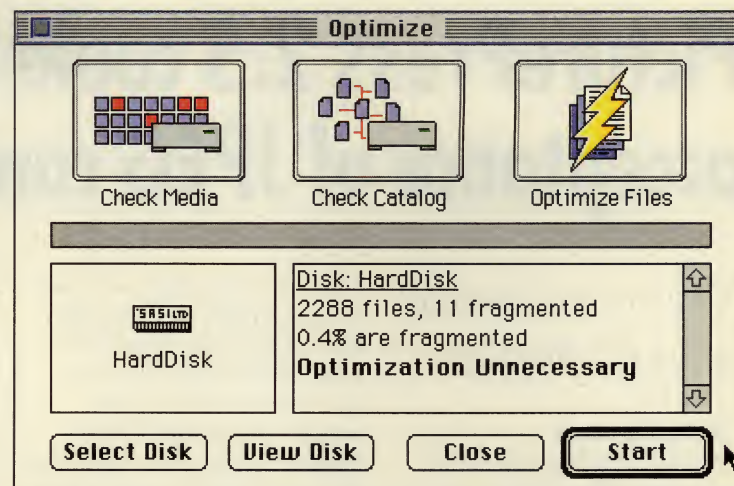
Fetch 1.0

Balloon help	Yes
TrueType	n/a
Publish and subscribe	Yes
Apple events	Yes
32-bit addressing*	Yes

*According to vendor.



The Repair Disk process in Fifth Generation Systems' Public Utilities for the Macintosh fixes five types of problems, including bad blocks, catalog problems, file fragments, System-folder problems and general file problems.



The Optimize window for Public Utilities displays basic information about the files on a hard disk, such as the percentage of files that are fragmented. Public Utilities has the distinction of being able to undelete and recover files from an optimized disk.

Utilities

From Page 41

the main Public Utilities program (provided there is enough available memory) to immediately fix problems that are encountered. If there is not enough memory to launch Public Utilities, the program simply notifies the user that a problem was found and specifies the type of error.

Prevention allows you to forgo checks on floppy disks, as well as for disk optimization. You also can adjust the level of processing activity during idle time.

Other options allow you to track information about files deleted from floppies, as well as determine the number of tracked deleted files.

Fixing a disk. The Repair Disk module fixes disk problems. Although part of this component is available from within the Prevention

module, it is more thorough and should be run by itself periodically to check for harder-to-detect errors.

This component checks for damage to disk media, data structures that track disk information, the System folder, as well as all files on the drive. When an error is found, the user is prompted to decide whether to fix the file immediately, stop the scanning process, or ignore the error and continue scanning. For the few errors Repair Disk cannot fix, a simple message stating this is shown. In addition, Repair Disk allows you to set error repair to be automatic or turned off.

The Emergency disks are often used for both Repair Disk and Optimization; because those modules cannot operate on the start-up volume, the Emergency disk provides a good alternative boot disk. We did find that there wasn't enough room on the Emergency

disks to copy the System Enabler files necessary to start up our PowerBook Duo 230 or PowerBook 180, which is a problem.

If a disk is unrecoverable or has been accidentally formatted, the expert-mode Salvage Disk function may be able to recover many of the files on the disk. The basic options available when salvaging a disk are the same as those for undeleting files, which is covered later in this article.

One other expert-mode item allows you to perform a surface scan of any disk. This scan also can do a read-write check if desired, for a more complete check of the surface.

Public Utilities fully employs System 7's drag-and-drop capabilities; it can be set to launch a disk repair if a disk icon is dropped onto the program icon.

In addition, each scan-and-repair operation creates a report file,

which you can view, save to disk in a variety of formats or print. Depending on the mode of the program, reports can be simple, indicating only the areas problems were found in, or very lengthy, describing each encountered problem in detail and giving full information about system setup.

Repair File. Repair File, a relatively simple utility, fixes damaged files. Although it is most effective on text files, it also can be used to retrieve data from binary files, such as those used by graphics programs. (Text retrieved from word processing data files will lose any special nontext formatting characteristics.)

You can examine the contents of the damaged file prior to retrieval. A graphical display of the status of

the blocks that make up the file gives an indication of how extensive the damage is.

And if all other recovery methods fail, Repair File allows at least some critical information to be retrieved.

Undelete. Undelete does just what its name implies. Deleted files that have been tracked by Prevention can be restored even after the disk has been optimized, a feature unique to Public Utilities. (As we mentioned earlier, Salvage Disk functions in the same way as Undelete.)

You can find files four different ways. The best way is to use the Prevention data that tracks files as they are thrown away. A quick scan, another method, is the fastest way to search for files, although it may miss some; an extended scan can be used for a more detailed search of the disk. Finally, a text search can search for a specific text string. The search text can consist of partial or complete words, as well as even for specific phrases.

After it has performed the search, a list of files is shown, each with an indicator of how much of each file is available for recovery. You can specify whether to include or exclude invisible files, unrecoverable files and files in the System folder.

The files can be restored once a target disk is selected. The program does warn against restoring to the same volume because doing so may overwrite other files you want to restore later. All directory information is lost when restoring files, and all recovered files are placed in the Recovered Files folder on the target disk.

Optimize. Rounding out the utilities, Optimize eliminates file fragmentation by copying all the pieces of a file to one contiguous location on the disk. It also gathers all the free space into one large pool at the end of all files.

As with Repair File, Optimize often will be run from the Emer-

See Utilities, Page 46

vided XTND filters include Microsoft Word, WordPerfect, Claris Corp.'s MacWrite II, T/Maker Co.'s WriteNow and several others.

Spiral is designed to maximize PowerBook battery life. It loads completely into memory (the suggested allocation is 1 Mbyte), and most alerts do not cause the hard disk to spin up. Spiral also contains a battery-charge indicator and an optional wider I-beam cursor that prevents "submarining."

The 50-page documentation is adequate, but it's too casually written. Menu commands, for example, are called Menu Picks. But if you can overlook syntax and grammar, the manual is serviceable. The manual is also provided on disk in Spiral Notebook format, so you can use the powerful Find command to search for relevant sections quickly. The 30-page Spiral Hints & Tips file is useful but isn't included in the printed documentation. Technical support is toll-free.

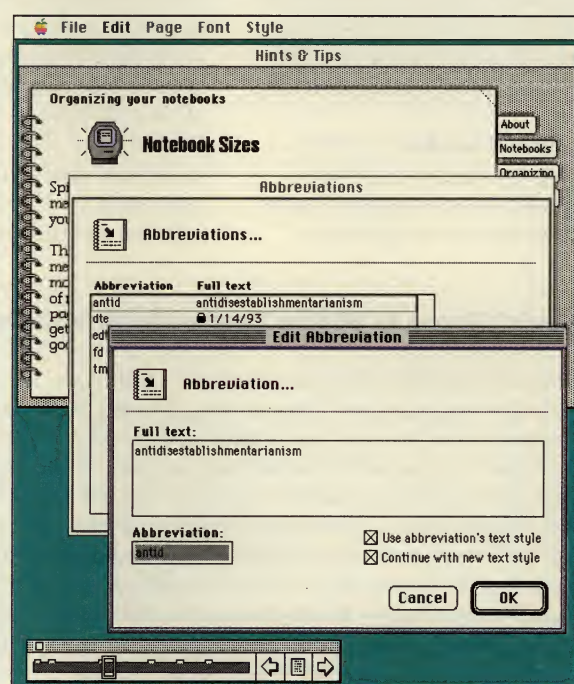
A few problems. The concept on which Spiral is based is appropriate for the task of note

taking, but the implementation is uneven at best. The designers apparently skipped entire weeks of Mac-interface-design class. You can create a Notebook in three predetermined sizes, but the Notebook window cannot be resized since it contains no resize box. When you locate text with the Find command, the Find window is dismissed and the text is selected. If you absentmindedly press the Return key expecting to advance to the next occurrence, you will instead replace the text in the document with a paragraph mark.

Text flow is erratic. Each page holds a limited amount of text, inserting a new page when you've reached the limit. If you delete text from a page, Spiral doesn't reflow the text on the pages after it, which is fine most of the time but can be an annoyance at other times. It would be nice to have the option to pull more text from the following page.

Graphics are limited to one per page and can be placed in one position only. And occasionally, the Save command is dimmed

The Abbreviations feature in TechWorks' Spiral allows you to set up a list of words that get expanded when you type their abbreviation.



even though you've altered the Notebook.

If you regularly take notes, Spiral offers an innovative alternative to using a word processor. We know of no other product that provides comparable flexibility in organizing notes. It is a pity that the designers

paid so little attention to its interface because otherwise Spiral is a noteworthy product.

TechWorks Inc. is at 4030 Braker Lane W., Suite 350, Austin, Texas 78759. Phone (512) 794-8533; fax (512) 794-8520.

— By Dale Coleman

PicturePress 2.5 could speed up acceptance of JPEG compression

New version handles many file formats

By Steve Hannaford

Marked enthusiasm greeted the introduction of the JPEG image-compression standard several years ago. The prospect of significant size and time reductions in storing and moving large image files was seen as a major boon. But despite the initial excitement, there has been slow acceptance. The use of JPEG compression, while slowly increasing, still remains relatively low. The recent upgrade of Storm Technology Inc.'s PicturePress software to Version 2.5 may accelerate that adoption.

The basics. PicturePress supports a number of file formats, including PICT, TIFF and Encapsulated PostScript, as well as a range of JPEG (Joint Photographic Experts Group) formats. The package includes a number of distinct pieces of software. PicturePress itself is a stand-alone application that converts image files in a number of resolutions and formats, at different compression ratios. The package also includes a plug-in module for

Adobe Photoshop that can import and export JPEG and EPS-JPEG files with adjustable compression ratios, both in RGB (red, green, blue) and now CMYK (cyan, magenta, yellow, black) modes. PictureDecomPress is a utility that is distributed freely (similar to Aladdin Systems Inc.'s UnStuffIt). This stand-alone program works with RGB JPEG files and can convert them to TIFF or PICT files.

In addition, a PhotoFlash control panel allows the user to access any cards with Storm JPEG accelerator chips on them, including Storm's PhotoFlash board, SuperMac Technology's ThunderStorm and DayStar Digital Inc.'s Charger boards. Some scripts for HyperCard and UserLand Software Inc.'s Frontier are included as well for automating the program, along with a runtime version of Frontier 2.0. In addition, a module called QuickPress, when run with a Storm-compatible accelerator card, can speed decompression and display of PICT-JPEG files for QuickTime display (see story below).

Storm Technology also is offering a package called PicturePress Plus, which includes the above-mentioned software and the PhotoFlash board.

Of all these pieces of software, the Photoshop plug-in will be the most useful for most users, but PicturePress has more controls, is slightly faster and handles batch processing.

How it works. The JPEG compression scheme has been described often enough in reviews and features, so it requires no

detailed description here. The key concept is that JPEG reduction generally is "lossy" in nature, that is, it loses color data of marginal interest, especially where there are very slight variations in color over contiguous areas. The user determines the amount of loss that might be acceptable and gets proportional reduction in file size, from ratios of 2-to-1 up to 200-to-1.

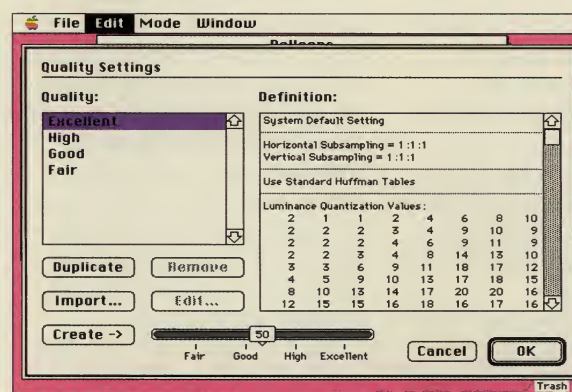
The amount of loss that might be acceptable varies depending on the project. For printed matter, conservative JPEG users start at 2-to-1 and maximize at 8-to-1. For QuickTime use, where details on specific images are less important, higher compression rates can make sense. Storm Technology also offers a specific feature called JPEG++ that allows for selective compression in one area of the image so that users can de-emphasize the detail in a shadow area, for example.

The new version. Version 2.5 has a number of significant enhancements that, as noted above, extend the usability of the product. Photoshop users will find big improvements in the plug-in modules, principal of which is the ability to handle CMYK files.

Users also can save EPS-JPEG files directly from Photoshop, a format that is compliant with PostScript Level 2 printers and results in enhanced printing speed because of faster downloads. These EPS-JPEG files can be, for example, included in page-layout programs. Along with this EPS-JPEG format, users can save clipping paths so that



The compression level in each PicturePress image can be determined by moving a slider. You also can create color thumbnails of each image and apply compression to only selected portions of an image.



The controls in Storm Technology's PicturePress application allow you to redefine standard quality levels of compression to parameters suitable for the requirements of each site.

silhouetted images can be transferred in compressed format to other programs. Likewise, any PostScript path can be saved with an image for later editing.

Photoshop users can create thumbnail representations of their compressed images. Caption text can be stored with compressed image files, up to 32 Kbytes if you feel particularly prolific.

In addition, you can customize compression settings to create your own definition of the basic Excellent, High, Good and Fair

settings for the program. Customization tools range from simply adjusting the amount of compression ratios to more-esoteric expert settings such as luminance quantization tables and chrominance subsampling ratios. Photoshop users have to open the PicturePress application to make use of this capability, however.

New support for Apple events means that you can use Frontier or other programs that send Apple events. The batch-compression script included is a good example of this approach.

Performance. The speed of PicturePress with the board has always been good, but earlier reviewers claimed that the software-only option was tediously slow. We found that the software, especially on our Mac IICI with a DayStar PowerCache 50-MHz 68030 accelerator, was reasonably fast. For example, we took a 4.5-Mbyte CMYK file in Photoshop and saved it as an EPS-JPEG file. With the Excellent setting (about 4-to-1 compression) it took 33 seconds to compress with PhotoFlash and 85 seconds using only the software. With the Fair setting, which uses 40-to-1 compression, it took 25 seconds with hardware and 72 seconds using the software only. Individual files will differ, of course.

See PicturePress, Page 47

score card

PicturePress

Storm Technology Inc.

Version tested: 2.5

List price: \$199*

Overall value ♦♦♦♦

PicturePress 2.5 makes a very good product even better. The Storm Technology team seems determined to produce the most useful product in this niche, and the upgrade answers almost every imaginable shortcoming while adding a set of handy new features and enhanced speed. If you need a JPEG-compression solution, PicturePress is the obvious first choice. If you do need this capability you probably also need one of the Storm-compatible JPEG acceleration cards as well, which will definitely improve performance.

Performance ♦♦♦♦
Features ♦♦♦♦♦
Ease of use ♦♦♦♦♦
Documentation/support ♦♦♦♦

*Upgrades, \$59 (free if purchased after August 1992); PicturePress Plus with PhotoFlash card, \$999.

QuickPress is Storm Technology's QuickTime codec for compression

QuickPress is Storm Technology Inc.'s \$69 QuickTime codec for compressing and decompressing files using the company's hardware accelerator. This allows a QuickTime user to compress PICT files and video or animation at high speed and better quality than using the Apple JPEG (Joint Photographic Experts Group) QuickTime compressor. QuickPress works with any application that supports QuickTime, as long as you have Storm's PhotoFlash, SuperMac Technology's ThunderStorm or DayStar Digital Inc.'s Charger board installed.

While most users will not use Apple's Photo-JPEG compressor for video (custom video compressors are faster and more efficient), it is possible to use the QuickPress JPEG and achieve acceptable results on playback. In our tests, a video that played back at 1 frame per second on a Mac IISI after compression with the Apple JPEG compressor played back at 10 frames per second using QuickPress and the ThunderStorm board. JPEG compression delivers noticeably higher quality than Apple's video compressor.

QuickPress is primarily useful, however, for PICT compression and decompression. Any program that accepts PICT images also can use PICT-JPEG images that have been compressed by QuickPress. This includes page-layout and database applications, for example. This access is transparent to the application, but files will open and save as much as eight times faster than normal. The PICT-JPEG format also offers as much as tenfold savings in disk space with relatively little loss in quality. We found little deterioration of test images when we used a Medium compression setting, either when the image was displayed on the screen or printed to a color printer.

Users who don't have the PhotoFlash board can decompress QuickPress-saved images using the standard Apple JPEG compressor-decompressor that comes with QuickTime.

QuickPress is a handy, unobtrusive QuickTime and JPEG accelerator and a valuable addition to either the Storm or SuperMac hardware compressors. The program is included free with Storm's PicturePress. — By Steve Hannaford

Docks make certain no Duo is an island

By Rick LePage

While it is possible to use a PowerBook Duo without a dock, there are the imposing limits found in the Duos' lack of a built-in floppy or SCSI interface. Apple does offer a PowerBook Duo Floppy Adapter for the Duos, but most users will want a dock with more capabilities than a single floppy drive. Today, your only real solution is the Macintosh Duo Dock.

The Duo Dock is more than just a peripheral for the Duo 210 and 230. It contains two serial ports, a modem pass-through connector, a floppy drive, two NuBus expansion slots, a space for the 68882 math coprocessor missing in the Duo, room for a 3.5-inch internal hard drive, video-out capabilities and more. It also will recharge your Duo even if it is not powered up.

Apple also designed the Duo Dock to work in concert with the Duo for some subsystems, chiefly the dock's NuBus, SCSI and serial interfaces. Both the Duo and the Duo Dock have code in their respective ROMs that "share" responsibilities for certain subsystems when a Duo is docked.

When you insert a Duo into the Duo Dock, a mechanized transport

sucks it in cleanly when you reach a certain point. When you press the Eject button, it will safely shut down your Mac (prompting you to save any open files) and push the Duo far enough from the unit for you to pull it out. If the power goes out or your Eject mechanism fails, there is a manual-eject switch.

Like the Mac Quadras, the Duo Dock comes with a key that allows you to lock your Duo in or anyone else's Duo out.

Performance. We tested a Duo Dock with a Duo 230 and found that it met or exceeded most of our expectations. Performance in eight-bit mode on the Macintosh Color Display was about the same as on the stand-alone Duo in four-bit mode, and it was a definite treat having access to all the features of a desktop machine.

It took a while for us to get used to having to shut down our Duo before docking it, especially since we had gotten in the habit of always leaving our PowerBook in Sleep mode.

Getting inside the dock.

Apple has made it fairly easy to get inside the dock to add an internal drive and a math coprocessor. Adding NuBus cards is a bit more complicated, requiring the removal of the internal chassis, but the process is not difficult.

We installed both a video card and an Ethernet card in two separate Duo Docks without problems.

Conclusions. While it still will be a while before Apple's Duo MiniDock and PowerBook Express Modem ship, you finally can dock your Duo with something more substantial than a floppy drive.

The combination of a notebook and docking station make for a powerful system: a machine that is light and portable but which has all of the benefits of a desktop system when docked. A number of vendors, including Compaq Computer Corp. and NEC Technologies Inc., have offered Intel-based docking systems; the Duo system represents Apple's approach, and the Duo Dock is a very well-designed implementation.

While we have concerns about the overall cost of the Duo system with a Duo Dock, we feel comfortable with the dock itself. Apple has chosen a model of modularity that should serve it well as the PowerBook Duos evolve. □

Duos

From Page 1

The linchpins of the Duo line are the CPUs, the Duo 210 and 230.

The two models generally share the same characteristics, differing only in the speed of the microprocessor on board. The Duo 210 has a 25-MHz 68030 inside, while the 230 has a 33-MHz model.

The attributes of the line include:

- ▶ A weight of 4.2 pounds, down from the 6.8-pound weight of the all-in-one PowerBooks.

- ▶ A 9-inch (diagonal) supertwist LCD screen that provides 16 levels of gray at 640 by 400 pixels.

- ▶ 4 Mbytes of dynamic RAM on the motherboard, with a limit of 32 Mbytes (although current memory technology will limit the maximum to 24 Mbytes).

- ▶ An 80- or 120-Mbyte internal hard disk.

- ▶ A single RS-422 serial port that supports LocalTalk.

- ▶ A 152-pin expansion connector, used to attach docking peripherals to the Duo.

- ▶ A nickel-metal-hydride (NiMH) battery that provides between two and four and a half hours of power, according to Apple.

- ▶ A 19mm trackball, significantly smaller than the 30mm model found in the all-in-one PowerBooks.

The Duos get their weight advantage from the omission of a floppy drive and the use of a lightweight magnesium subframe inside the case.

score card

Macintosh PowerBook Duo 230

Apple
Overall value ♦♦♦♦

List price: \$2,609*

The Duo 230 is a 4.2-pound notebook that sacrifices connectivity options in favor of weight. Its innovative design includes a 152-pin connector that lets you connect your Duo to a number of docking stations, of which Apple's Duo Dock is the first to ship. The problems in the Duo system are evident in the lack of availability of Apple's internal modem and MiniDock, and many users will not want to live with the passive-matrix screen, small trackball and single serial port. We also have concerns about the cost of configuring a Duo with a desktop base. That said, however, if you want a truly lightweight, high-performance mobile computer that has the potential to operate as a full-featured desktop Mac, the Duo 230 (or its lesser-powered sibling, the Duo 210) is a good machine.

Performance ♦♦♦♦
Features ♦♦♦♦
Configuration ♦♦♦♦

Compatibility ♦♦♦♦♦
Documentation/support ♦♦♦♦♦

*With 4 Mbytes of RAM and an 80-Mbyte hard disk; similarly configured Duo 210: \$2,249.

Performance. For our review we tested a Duo 230 with 12 Mbytes of memory and an internal 80-Mbyte drive. The overall performance of this machine alone and in conjunction with the Duo Dock (see story, this page) was very good. Even with a number of extensions loaded the Duo was responsive and quick.

There is no 68882 math coprocessor in the Duos, which may be an issue to users of spreadsheets and math-intensive applications. We noticed some slowness when working with complex spreadsheet models in Microsoft Excel, but overall, it was not a big issue for us.

Our standard benchmarks showed the Duo 230 to be faster than the Mac IIci and Mac IIvx for most tasks (see chart, below). The Duo 210 is comparable in performance to the IIci and the IIvx.

The usability test. The lightness of the Duo 230 made it a joy to carry. We found that we would bring our Duo along much more than we ever did the 170.

We also warned to the screen and the smaller trackball, although both required a significant adjustment period before we felt comfortable.

See Duos, next page

BENCHMARKS

PowerBook Duo performance (Times in seconds, lower is better)



The tests were performed with System 7.1 with only system extensions loaded. The stand-alone Duo 210, Duo 230 and PowerBook 180 were run in 4-bit mode; the Duo with Duo Dock, Mac IIci and Mac IIvx were run in 8-bit mode using internal video. The Excel recalc was executed with Microsoft Excel 4.0.

score card

Macintosh Duo Dock

Apple
List price: \$1,079
Overall value ♦♦♦♦

The Duo Dock is a well-designed docking station for the PowerBook Duo 210 and 230 that turns your Duo into a desktop Mac. It provides two NuBus slots, space for a math coprocessor, a bay for an internal drive, built-in video and a full set of ports. The transport mechanism at the heart of the Duo Dock works cleanly and prevents you from losing your work by accidentally pressing the Eject button. We still have some questions about the Duo Dock's "shared" subsystems, but overall it does what it is supposed to do very well. It also should be noted that you will need to purchase at least a keyboard and a monitor to use the Duo Dock with a Duo.

Performance ♦♦♦♦
Features ♦♦♦♦
Configuration ♦♦♦♦
Compatibility ♦♦♦♦
Documentation/support ♦♦♦♦

Utilities

From Page 43

gency disk because it cannot operate on the start-up disk. A graphical display of the used disk space is available, showing which blocks on the disk are used and which are free.

Launch Pad. Fifth Generation also includes Launch Pad, a utility that displays a list of icons that you can directly attach to programs and their data files anywhere on any mounted volumes. Although useful, Launch Pad lacks some of the flexibility of programs such as On Cue from ICOM Simulations Inc. or Now Software Inc.'s NowMenus (part of Now Utilities). While you can freely adjust the total number of rows and columns of icons on the Launch Pad window, the window is not resizable and is limited to the number of applications visible at the user-selected size. Only one data file can be linked to each application.

Launch Pad also features a messaging sys-

tem, which can receive and display messages from other Fifth Generation products, such as when your disk is due for maintenance.

Performance. During testing, we had one major problem: Public Utilities encountered an error when trying to optimize and repair a hard drive that had an older driver installed. Public Utilities claimed to fix the problem, but the error remained and showed up repeatedly, with a claimed fix each time Repair Disk was run. (The problem, however, disappeared when a newer driver was installed.)

In terms of general disk repair, we had varied luck with Public Utilities. Two damaged drives, one in a PowerBook Duo 230, the other in a PowerBook 180, could not be repaired with Public Utilities; with MacTools, we were able to repair both disks. We also had a few instances where Public Utilities found problems that its competitors did not report. It is important to note that, in our experience, no single product can fix all problems you are likely to encounter. We like Central Point's approach best, which allows you to Undo a disk-repair operation.

Documentation and other aspects.

The manuals provided with Public Utilities are very useful and cover all aspects of using the program, including commonly asked questions and what to do in an emergency.

A separate technical manual, covering details about disks and how they relate with

computer systems, is shipped to those who register and is a nice touch. It is quite informative and provides the details most people will need to know about disk recovery.

Conclusions. We applaud Public Utilities for its claim to find and fix several problems its competitors either can't fix or don't even check. And its capability to undelete files even after an optimization is truly unique. Still, the package has some minor flaws that show it is a first-generation product.

Although it is priced in the same range as Norton Utilities and MacTools, it lacks Mac-

Tools' backup and virus-detection capabilities and Norton's backup, system-enhancement and encryption features. (It seems odd that Fifth Generation didn't include its backup program, Fastback Plus but did include the marginally related Launch Pad.)

Public Utilities has room for improvement. It may be strong and smooth, but its problems will limit usefulness. The package needs to grow a bit if it hopes to become a strong rival in the data-recovery market.

Fifth Generation Systems Inc. is at 10049 N. Reiger Road, Baton Rouge, La. 70809. Phone (504) 291-7221. □

SYSTEM 7 COMPATIBILITY

Public Utilities for the Macintosh 1.0

Balloon help	Yes
TrueType	n/a
Publish and subscribe	n/a
Apple events	Yes
32-bit addressing*	Yes

*According to vendor.

Duos

From previous page

able with them. In our opinion, the trackball is a much greater limiting factor than the screen; it requires more dexterity than the larger trackball on the other PowerBooks.

There are lots of other things to like with the Duos, and we had few problems going between the Duo Dock and the Duo 230 alone.

A noteworthy design feature in the Duo is the ease with which RAM can be added. Three Torx screws on the underside of the Duo allow you to lift up the keyboard. A RAM expansion connector sits directly under the keyboard, allowing you to easily snap in a new memory module.

Battery life. Another advantage of the Duos over the PowerBooks that preceded them is the NiMH battery. This battery doesn't have the "memory" and charging problems inherent in NiCads, and it stores a longer charge.

While we never approached the four and a half hours Apple claims for the battery life, we did get more than two and a half hours per charge several times in normal use and less than two hours in heavy use, with frequent accessing of the internal drive. All of these times were markedly better than with our PowerBook 170 and 180.

Apple included a backup battery in the Duos that provides four minutes of power when the Duo is in Sleep mode. This excellent feature allows you to switch batteries without having to shut down your Duo or find a power outlet.

Duo downers. While our experience with the Duo 230 was generally good, we ran into a number of limitations and problems that reminded us that we were on the cutting edge.

The chief problem is the unavailability of several of the components necessary to realize the potential of the Duo concept. In November, if you could find a Duo, it was most likely a 210. If you got one, you might have been able to get a PowerBook Duo Floppy Adapter and a floppy drive (for \$334). The closest you could get to any dock was a waiting list for one.

The absence of the PowerBook Express Modem is the most acute issue. The Duos' portability is their greatest strength, but the delay in delivering the modem severely limits their usefulness as mobile systems. It also caused us grief to go back and forth between an external modem and a LocalTalk connection using the single serial port.

We feel similarly about the Duo MiniDock, Apple's alternative to the Duo Dock. The MiniDock is an attractive concept, offering SCSI, serial and external video access in a small footprint at half the cost of the Duo Dock,

but Apple has yet to ship this component.

While the shortages will ease up and enterprising third parties will jump in soon with docks and related peripherals, there are also reliability concerns with the Duos. Our first review unit had to be replaced because of a screen problem, and the 120-Mbyte internal drive disappeared from the desktop after crashes in both our first and second Duo 230. Reports on-line indicate that other users have experienced similar problems.

Pricing quandary. With 4 Mbytes of RAM and an 80-Mbyte hard disk, the Duo 210 is \$2,249, and the Duo 230 is \$2,609. While these prices are reasonable for the performance you get, the additional cost of docks and peripherals can quickly get out of hand. The Duo Dock costs \$1,079, Apple's Macintosh Color Display is \$589, and the cheapest keyboard is \$105. The Express Modem, when it ships, will be \$319.

The best prices we have seen on any of the Apple products is Duo RAM, which is reasonable by Apple standards, but it is also scarce. We have seen slight discounting on the Duos but not enough to reduce the feeling that you are paying a high price for the Duo duality.

Conclusions. Both the Duo 210 and 230 have a feel that is entirely unlike the PowerBooks that came before them. Although they are lighter than a PowerBook 100, they can outrun a 170. There are a number of other advantages — fast processor, docking options, easy access for RAM expansion and improved battery life among them — that make both Duos good Macs for mobile users who want the full benefits of a desktop machine as well.

For many, the limitations and restrictions of the Duos will pale in comparison to the weight and performance of the units. If the Express Modem ships soon and is as good as it sounds, it will truly be possible to have a powerful, fast Mac that can be carried anywhere and be plugged into the global network.

However, there probably will be more users who will pass by the Duos in favor of another Mac. With the Duos, Apple has implemented a number of new technologies and design philosophies, a process that always seems to carry both promise and problems.

The shortages of Duo Docks and modems probably will be over soon, but there are still enough questions that we think a good-size group of users will wait for the next implementation of the Duos before buying.

Given the success of the second-generation PowerBook 160 and 180, we would imagine that Apple will get many of the problems worked out. □

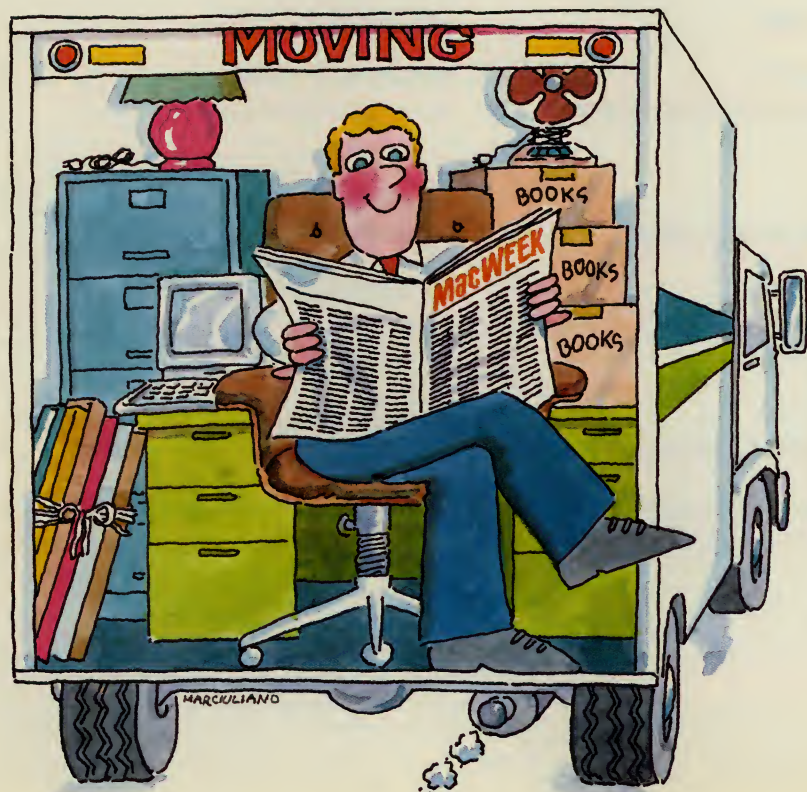
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PicturePress

From Page 44

Decompression times were very fast, generally less than 20 seconds. We judge the speed to be quite good.

Documentation and support. A well-illustrated manual explains the ins and outs of JPEG compression in some detail. The manual is useful as reference on the subject of JPEG, even if you are not sure whether or not to use the product itself.

The one serious problem we see with this product is the proliferation of new file types. We were nonplused by the behavior of EPS-JPEG files in other applications, for example. You cannot import this file format back into Photoshop, and our attempt to open the file resulted in a spurious memory error. We finally realized that EPS-JPEG was not meant to be saved for later processing in Photoshop, but the JPEG format itself can be used for that purpose.

PicturePress 2.5 is an impressively more usable upgrade to an already solid product.

Users now have trouble enough between composite EPS, Desktop Color Separation, CMYK TIFF, RGB TIFF and PICT files. The addition of JPEG, EPS-JPEG and PICT-JPEG formats seems likely to cause even further chaos, even if, as seems likely, Storm's formats prevail over other JPEG formats. This may be no big problem in a closed system where users know what they are likely to receive, but we can anticipate lots of confusion in the real world when all this breaks loose into service bureaus and trade shops. This is not Storm's fault, but it could become a minor catastrophe for some users.

Conclusions. PicturePress 2.5 is an impressively more usable upgrade to an already solid product. The program interface is good, the features are surprisingly extensive and editable, and the installation is clean and simple. Users have to decide for themselves if they are ready for and in need of JPEG compression, but the factors in its favor — especially its connection with PostScript Level 2 — are weighing more and more heavily all the time. If the answer is yes, PicturePress is certainly the leading choice.

Storm Technology Inc. is at 1861 Landings Drive, Mountain View, Calif. 94043. Phone (415) 691-6600; fax (415) 691-9825. □

SYSTEM 7 COMPATIBILITY

PicturePress 2.5

Balloon help	Yes
TrueType	n/a
Publish and subscribe	n/a
Apple events	Yes
32-bit addressing*	Yes

*According to vendor.

Uncertainty and doubt major blocks to JPEG adoption

The reasons for the slow adoption of the JPEG (Joint Photographic Experts Group) standard come down to uncertainty and doubt. First, users of image information are very mistrustful of any loss of information, something that can happen in any circumstance with JPEG compression. Getting accurate, high-quality images to print has

been hard enough up until now without having to risk the factor of loss of color data.

Another issue is that while JPEG is a compression standard, it is not a file-format standard; some potential users are waiting for the file-format and compatibility issues to be resolved. Also, JPEG schemes have not dealt with sepa-

rated CMYK (cyan, magenta, yellow, black) files, the critical file type in the publishing industry. Compression of the standard unseparated RGB (red, green, blue) color files is of much less use to most publishers. The new PicturePress software resolves some of these questions, and when properly supported by hardware acceleration, it is worth another look from imaging professionals. — By Steve Hannaford

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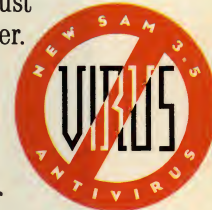
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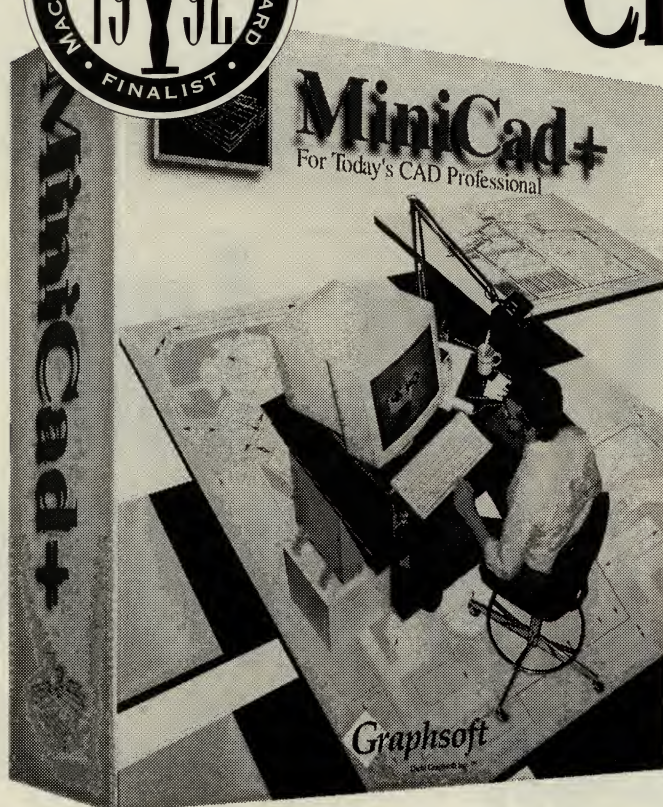
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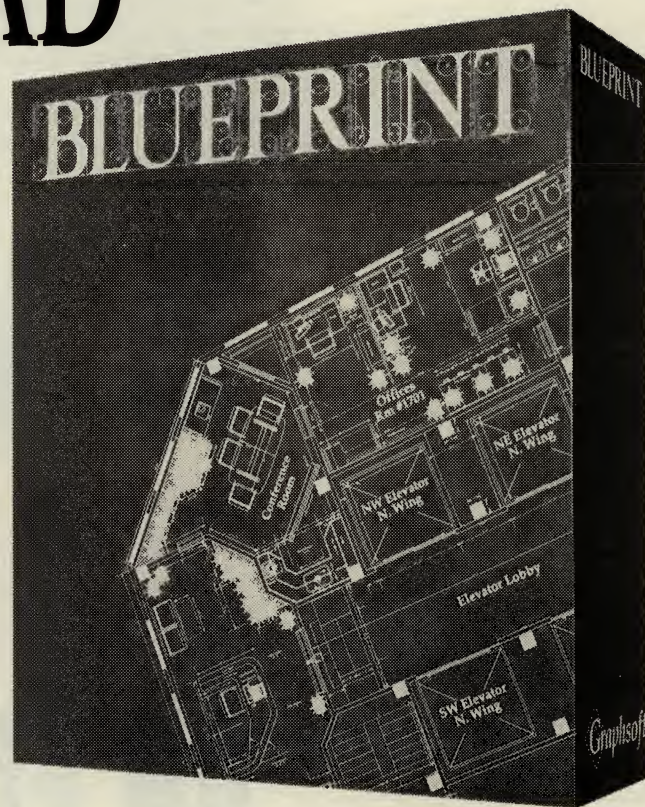
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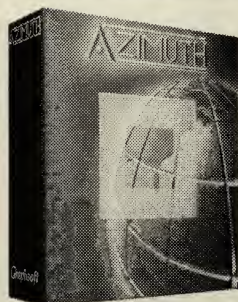
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Mac CAD software adding dimension to architecture

A wide variety of software offers architects choices ranging from 2-D sketching to 3-D model building and more.

By Erin Rae Hoffer

While DOS and Unix-based CAD systems have dominated the architectural CAD market for many years, products such as Graphisoft Inc.'s ArchiCAD and Ashlar Inc.'s Vellum 3D — which grew up on the Mac — have matured into sophisticated professional offerings. Even the big CAD packages in the Unix and DOS markets (such as Autodesk Inc.'s AutoCAD, Intergraph Corp.'s MicroStation and Computervision Corp.'s VersaCAD) now have robust Mac versions.

Beyond automation of traditional methods, architects now use Mac CAD software to apply photo-realistic visualization, animation, database tracking of building components and computer-based facilities management to a variety of projects.

"Architects and designers tend to sketch, in order to put their ideas down on paper and scrutinize them," said Bob Isaac, principal of Isaac & May Inc., a corporate-interiors design company in Chicago. "With CAD it's easy to go right to the real thing, to control lights and views, and produce a series of images that the client can understand and accept."

Besides productivity and efficiency gains, CAD can make it possible for design companies to offer new services to their clients. However, not all CAD products are aimed at architectural projects, and some design tools are not even true CAD products. But with a firm knowl-

edge of your requirements in hand, you'll be ready to face an impressive list of available products.

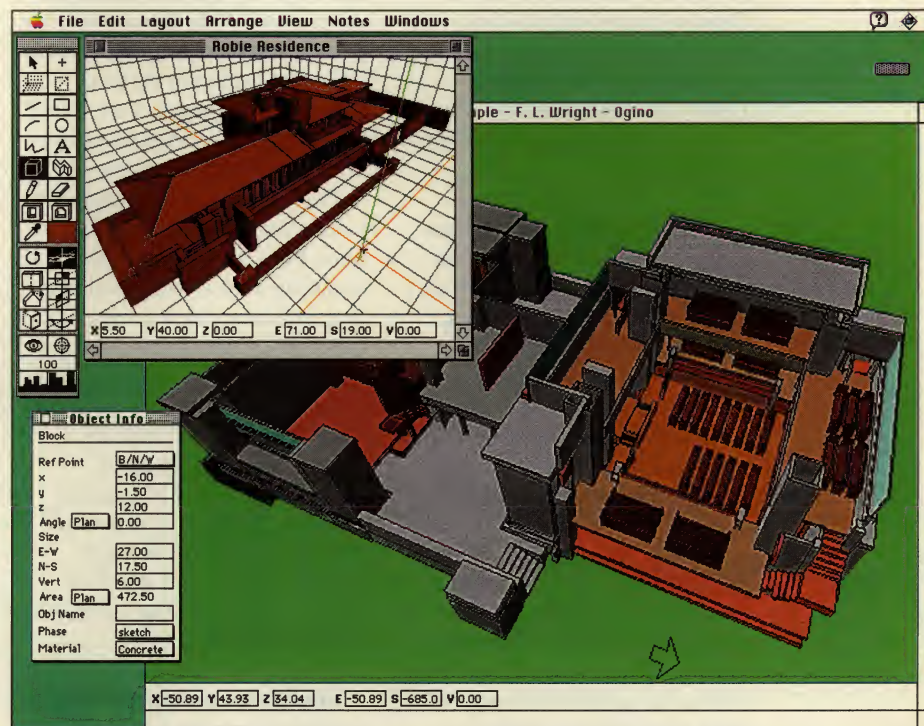
What do you need? With so many options available, experts say it's important for design companies to consider their methods as well as the type of work they do before investing in a CAD program.

"CAD isn't always the answer," said Dan Tully, executive vice president of Cambridge CAD Technologies, a CAD training and consulting company in Melrose, Mass. "However, if you need to reuse information, or your projects require a high accuracy factor, then CAD can help you be more productive."

According to users, drawing changes that happen frequently during a building's design development are accomplished much quicker using CAD than drawing by hand. CAD drawings also can function as a database, allowing you to attach manufacturing and cost information to furnishings or building components and then generate complex reports.

According to Tully, another CAD benefit for architects is that a few months after integrating CAD into its work process, a business will begin developing a wealth of stored information to draw upon for future projects.

Architectural focus. While most CAD products have a variety



Artifice's Design Workshop provides a variety of 3-D CAD tools. Here both the exterior and interior views of a building can be explored, including a 3-D cross-hair cursor that makes it easy to align objects in a 3-D space.

of drafting and modeling tools, not all are aimed at architectural design. According to experts, the two main players in the Mac architectural CAD field are ArchiCAD and Unic Inc.'s Architrion, both of which were developed by architects for the Mac.

"ArchiCAD is truly easy to use," said Greg Cunningham, president of Cunningham Associates, a Boston-based design company. "Many of the other competing products are generic CAD engines that were designed for mechanical engineering or product design. ArchiCAD is less cumbersome to use than other packages I've tried, and the training time to get up and running with this package is relatively short."

AutoCAD, currently at Release 12 on DOS systems, has had interface improvements made to its latest Macintosh version, 11, incorporating more standard Macintosh interface features. This package continues to be very successful on the DOS platform, with AutoCAD claiming the lion's share of architectural CAD users on all platforms. MicroStation Mac also has a number of tools designed for architectural projects and is a heavy competitor with AutoCAD in the DOS market.

Another popular product, Vellum, incorporates artificial-intelligence capabilities in its interface. According to Ashlar, Vellum uses a patented Geographic Inference Engine, which tries to infer what you would like to do next.

Factors such as minimum

machine configuration and performance are also important. Vance Warnock, facilities mechanical engineer at Motorola Inc. of Austin, Texas, said: "Performance is definitely an issue for us. Products, even those from the same vendor, may not offer the same performance advantages across different platforms."

Having purchased AutoCAD for the Mac, Motorola plans to assess the product's performance on other platforms to determine whether it will stay with AutoCAD Mac.

2-D architectural CAD. The first level of CAD products for architectural design primarily work in 2-D, where Mac software is aimed at replacing manual drafting. Products in this category include Claris Corp.'s Claris CAD, Engineered Software Inc.'s PowerDraw, Amiable Technologies Inc.'s FlexiCAD, Innovative Data Designs Inc.'s Dreams and Graphsoft's Blueprint.

David Paparello, network manager at ADD Inc., an architectural company in Cambridge, Mass., recently needed to upgrade his company's Unix-based CAD software. Paparello decided to make the switch to Claris CAD on the Mac.

"There was definitely a leap of faith involved," Paparello said. "We weren't sure the pieces would come together to take on some of our larger projects." Paparello said it took less than six months to suc-

See CAD, next page

'3-D' doesn't necessarily mean it's CAD

Not all packages that are referred to as "3-D" are CAD programs. Some are more accurately described as modeling software because they offer only extruded and revolved forms and not precision drawing, although some modelers offer additional features such as high-quality rendering and animation.

Examples of purely 3-D modelers are programs such as Alias Research Inc.'s UpFront for the Mac, Artifice Inc.'s Design Workshop, Dynaware USA Inc.'s DynaPerspective and Macromedia Inc.'s ModelShop II, because they support preliminary schematic design. Others include Macromedia's Swivel 3D Professional and MacroModel and Alias Research's Sketch!

In addition, there are stand-alone software options for 3-D model visualization. Any 3-D modeler that can output a RIB (RenderMan Interface ByteStream) file can use Pixar's MacRenderMan to produce photo-realistic renderings.

Visual Information Development Inc.'s Presenter Professional, Strata Inc.'s StrataVision 3d, Macromedia's MacroMind Three-D and Specular International Ltd.'s Infini-D all render and animate 3-D models, enabling the creation of still images or walk-throughs.

Virtus Corp.'s WalkThrough software has some modeling features and is often used to create "flybys" through CAD models.

— By Erin Rae Hoffer

CAD

From previous page

cessfully make the conversion.

Ease of use led Isaac & May's Isaac to invest in PowerDraw. "We can customize our PowerDraw software with our own macros, using the Pascal compiler," Isaac said. "With PowerDraw, I can train someone in a couple of hours and get them up and running."

Adding a third dimension.

A true 3-D CAD system enables the user to precisely create any sort of architectural form, including nonorthogonal planes, such as a ramp for a wheelchair entrance. Some 3-D modelers, such as ArchiCAD, were developed specifically for architectural modeling, while others are more generic in their approach (see story, previous page).

While most 3-D modelers rely on polygonal surfaces, some, such as Autodesk's form•Z or Autodesk's AME (Advanced Modeling Extension), offer true solid modeling with union and intersection operations. Using those capabilities, an architect can create interesting forms, such as vaulted ceilings.

James Lennon, owner of Lennon Associates, an architectural design firm based in Del Mar, Calif., is

sold on form•Z's 3-D capabilities. "form•Z does everything that architects need, including topographic models and solids models," Lennon said. "You can absolutely control every aspect of the model with form•Z." He also uses form•Z to create multimedia design presentations by rendering the final sequence into a series of ray-traced images, which are shown to clients as an on-screen presentation.

Products vary in their approach to integrating 2-D and 3-D functions. For example, in Architrion II, modeling work is completed first, then orthographic or sectional views are cut and developed in another module.

Other packages, such as Graphsoft's MiniCad+, Autodesk's Generic CADD, ComputerVision's VersaCAD Macintosh, DesignCAD Inc.'s DesignCAD 2D/3D, Asym Technology's ZOOM and Vellum, combine drafting and modeling work into a single interface.

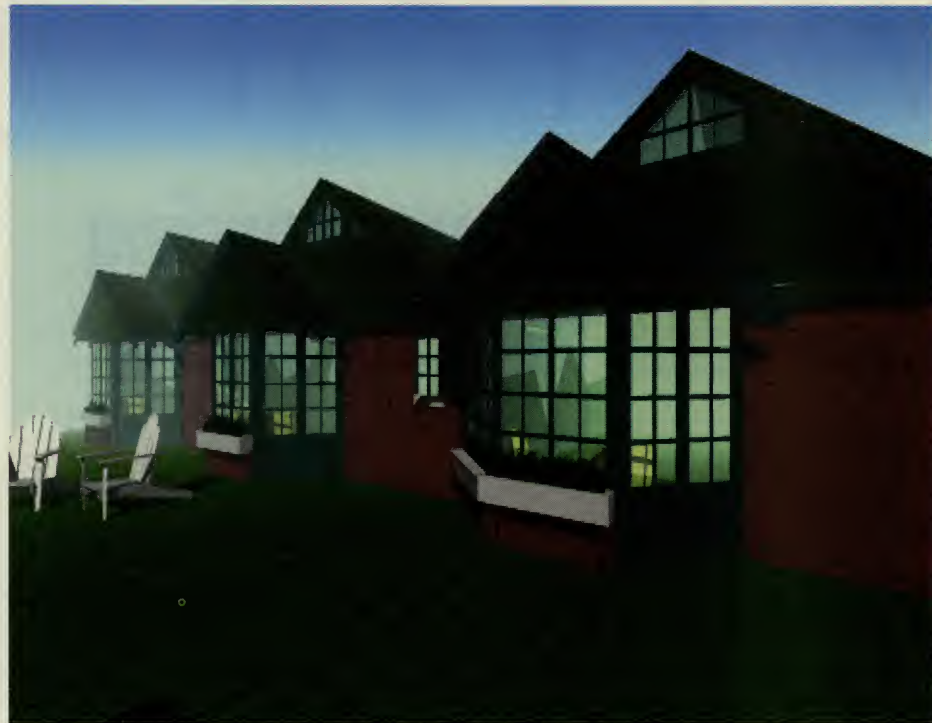
Importing and exporting. A product's capability to import or export files to other CAD systems is critical if you plan to share your work with other departments, consultants or clients.

Most products read and write industry-standard file types such as DXF (Drawing Interchange File) or IGES (Initial Graphic Exchange Specification), although experts said these translators can be problematic.

Intergraph recently touted MicroStation Mac's capability to read and write directly to DWG, AutoCAD's drawing file format.

File linking, the capability of software to "refer" to other drawings on the hard disk, is key to eliminating data redundancy and reducing costly errors. Both AutoCAD and MicroStation have this capability, which is an important one if your company grows into heavier CAD projects that require networking and security.

The vendor's role. The market positioning of CAD vendors also can have a big influence on what package you choose.



James Lennon, owner of Lennon Associates, an architectural company in Del Mar, Calif., created this exterior of a Santa Cruz, Calif., hospital using form•Z to create the CAD model and StrataVision 3d to render the final image.

"I look at a vendor's choice of platforms and at its success in the market," said Michael J. Fox, president of Rebus Technology Inc., a CAD consultancy for architects also based in Cambridge. "Purchasing a CAD product is really the same thing as investing in the future of a CAD company."

According to Fox and other users, support, customer service, upgrade policies and wide access to training all characterize good CAD software vendors.

"All products have bells and whistles, but no product has everything. What is important is to determine where the greatest com-

promise will be," Fox said.

"You can't afford to find that your platform offers only 60 percent to 70 percent functionality and then runs out of gas," ADD's Paparello said. "You have to monitor the available products and continue the evaluation process since things are changing so rapidly."

As the landscape of Macintosh CAD options matures, decisions based on careful comparisons between your company's requirements and available products can yield new working methods and high productivity for your business. □

CAD checklist

According to experts, there are five questions to ask when choosing an architectural CAD vendor.

- ▶ How committed is the company to further research and development? How often, if at all, do they provide updates?
- ▶ How long is the software's learning curve?
- ▶ Does the software implement the Mac interface well?
- ▶ Are other versions of this software supported on other platforms?
- ▶ If the product has 3-D capabilities, how well does it integrate the 2-D and 3-D sections?

Add-on products for architectural CAD

There are a wide array of third-party add-on products, templates and extensions for CAD programs. These products offer extra functions or utilities such as file conversion, macros or symbol libraries.

For example, extensions to AutoCAD include Autodesk Inc.'s AME (Advanced Modeling Extension), Softdesk Inc.'s AutoArchitect and GeoCAD Inc.'s GeoCAD software, all of which add advanced modeling or drafting features to AutoCAD's regular feature set.

Another example is Engineered Software Inc., which offers a product called Advanced Drafting Tools and Residential Construction Symbols Library for its PowerDraw software. The library provides added drafting commands and architectural elements for housing construction.

Lists of product-specific add-ons can be found through many sources, such as user groups, bulletin boards or software-specific newsletters. — By Erin Rae Hoffer

Product Info

ALIAS RESEARCH INC.

Alias UpFront for the Mac: \$895
Alias Sketch!: \$995
 100 Richmond St. E., Toronto, Ontario M5C 1P1, Canada
 Phone (416) 362-9181 or (800) 447-2542; fax (416) 362-0630

AMIABLE TECHNOLOGIES INC.

FlexiCAD: \$1,495
 Scott Plaza Two, Suite 625, Philadelphia, Pa. 19113
 Phone (215) 222-9066

ARTIFICE INC.

Design Workshop: \$895
 P.O. Box 1588, Eugene, Ore. 97440
 Phone (503) 345-7421;
 fax (503) 346-3626

ASHLAR INC.

Vellum 3D: \$2,495
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 Phone (408) 746-1800 or
 (800) 877-2745;
 fax (408) 746-0749

ASYM TECHNOLOGY

ZOOM: \$2,495
 924 Carl Road, Lafayette, Calif. 94549
 Phone (510) 943-6157;
 fax (510) 943-3213

AUTODESK INC.

AutoCAD Release 11: \$3,500
Advanced Modeling Extension: \$495
Generic CADD: \$495
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 Phone (415) 331-0356 or
 (800) 964-6432;
 fax (415) 331-8093

AUTODESSYS INC.

form•Z: \$1,495
 2011 Riverside Drive, Columbus, Ohio 43221
 Phone (614) 488-9777;
 fax (614) 488-0848

CLARIS CORP.

Clariscad: \$899
 5201 Patrick Henry Drive, Box 58168, Santa Clara, Calif. 95052
 Phone (408) 727-8227 or
 (800) 325-2747

COMPUTERVISION CORP.

VersaCAD Macintosh: \$1,995 and up
VersaCAD Macintosh Drafter: \$595
100 Crosby Drive, Bedford, Mass. 01730
Phone (617) 275-1800 or (800) 248-7728;
fax (617) 275-1800, Ext. 4525

DESIGNCAD INC.

DesignCAD 2D/3D: \$299.95
1 American Way, Pryor, Okla. 74361
Phone (918) 825-4848;
fax (918) 825-6359

DYNWARE USA INC.

DynaPerspective: \$995
950 Tower Lane, Suite 1150, Foster City,
Calif. 94404
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fax (415) 349-5879

ENGINEERED SOFTWARE INC.

PowerDraw: \$795
615 Guilford-Jamestown Road, Greensboro,
N.C. 27409
Phone (919) 299-4843;
fax (919) 852-2067

GEOCAD INC.

GeoCAD: \$800
P.O. Box 186, 33 Laurel Road, Pound Ridge,
N.Y. 10576
Phone (914) 764-4072 or (800) 964-3622;
fax (914) 764-5322

GRAPHISOFT INC.

ArchiCAD: \$4,450
400 Oyster Point Blvd., Suite 429, South San
Francisco, Calif. 94080
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fax (415) 871-5481

GRAPHSOFT

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BluePrint: \$295
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INNOVATIVE DATA DESIGNS INC.

Dreams: \$599
135 D Mason Circle, Concord, Calif. 94520
Phone (510) 680-6818; fax (510) 680-1165

INTERGRAPH CORP.

MicroStation Mac: \$3,450
289 Dunlop Blvd., Huntsville, Ala. 35894
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MACROMEDIA INC.

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MacroMind Three-D: \$1,495
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PIXAR

Showplace-MacRenderMan: \$695
CD-ROM: \$495
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fax (413) 549-1531

STRATA INC.

StrataVision 3d: \$995
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Utah 84770

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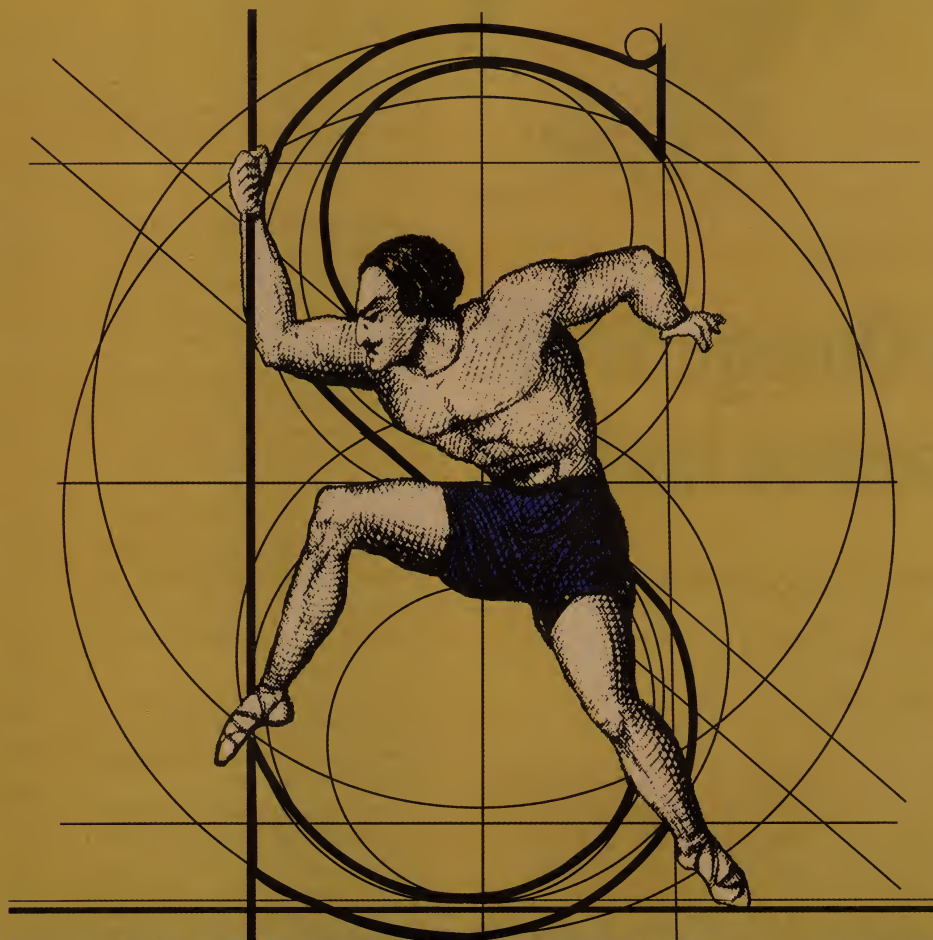
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MacInTouch RIC FORD

Restore Omega SANE with resource hack

System 7.0.1's speedy Omega SANE is missing from System 7.1, but you can put it back with a little hack. It even works with older Macs.

BUGS & TIPS

Sanity check. SANE (Standard Apple Numeric Environment) offers Macintosh developers a robust environment for performing arithmetic without having to worry about the sorts of weird errors and problems that exist in other computer systems. Lately, however, Apple's SANE has taken a few extra twists and turns.

The company several years ago distributed to developers a tweeky version called Omega SANE, which dramatically speeds some mathematical operations on certain Macs with FPU's (floating-point units). The speed comes from unusual patches, which modify an application's own code behind its back in RAM. Only applications that call SANE to handle floating-

point operations are accelerated; those that directly address the FPU, such as Microsoft Excel, are not affected, according to Apple.

Apple subsequently built Omega SANE into the new ROMs of the Quadras and PowerBooks starting with the PowerBook 140. It was included in system software for the first time with System 7.0.1 (see MacWEEK, Nov. 5, 1991), but it activates only on Macs from the IIci on and only if an FPU is present.

(You can enable Omega SANE on machines that have FPU sockets but don't come standard with the chip — the IIxi, LC, Classic II and PowerBook 140 — by adding FPU's and reinstalling System 7.0.1.)

The "backpatching" technique used to implement Omega SANE

raised serious compatibility concerns, however (see MacWEEK, May 18, 1992). And Apple, trying to prove that it had broken with its habit of tossing new capabilities into system releases supposedly designed only for new hardware, found itself in the position of arguing that the new version offered little real-world benefit for most people.

Despite these limitations, however, many Mac users seemed interested in the performance benefits Omega SANE promised. But with System 7.1 Apple quietly removed Omega SANE. (On newer machines with an FPU and Omega SANE in ROM, it may run regardless of the system version.)

Apple describes Omega SANE in Tech Note 314. Among other things, the document says that there is no reliable way to test for the presence or absence of Omega SANE and that there is no way for users or applications to disable it when it is installed.

Getting around. Along with its performance tricks, Omega SANE includes improved routines for converting between binary and decimal numbers. Version 1 of these routines is also included in ROMs for the LC and IIxi. Version 2 of the routines is in the ROMs of the Classic II, the Quadras and PowerBooks from the 140 on.

Try typing "45/100 - 0.45" in Apple's Calculator desk accessory to see if the improved conversion routines are running. If they are, the result is 0. Otherwise, the result is -2.71051E-20.

If the result is not 0, you can assume that Omega SANE is absent. It may or may not be present if the result is 0.

Programmers should note that an application that uses floating-point constants may produce different results depending on which version of the conversion routines was running when the application was compiled.

Try it at home. SANE-based applications potentially can gain a large performance boost from Omega SANE. In my tests under System 7.1, the MathClock benchmark showed a sixfold increase in speed on both a Mac II and a IIx. The application EarthPlot doubled its speed with Omega SANE on these machines.

A PowerBook 140, with no FPU, showed no significant differences when run under System 7.0.1 and System 7.1. Quadras running Omega SANE from ROM should not vary, either.

If you want Omega SANE under System 7.1, and it is not already in the ROMs of your machine, you can enable it, provided that an FPU

Ask David Ramsey

ARA isn't finicky, Installer is

Q. After working for months, AppleTalk Remote Access (ARA) quit operating on my Mac. I reinstalled it and everything's OK, but other people are having the same problem. Why?



A. You probably installed some new network-
ing support software, such as Ethernet drivers.

Most network software installs a version of AppleTalk in your system; if this new AppleTalk is older than Version 57, ARA won't work. The ARA installer installs the proper version for you.

The solution is to install ARA last or to reinstall it, as you did. Apple's new Network Software Installer 1.3 is safe, though: It installs AppleTalk Version 58, which works fine with ARA.

Apple networking software installation is getting rather convoluted these days. With System 7.1 file sharing, ARA, EtherTalk and the semi-mythical Network Software Installer 1.3 disk, you have to be a real network guru to get it all set up and working correctly since there's no documentation that explains how all these drivers interact with each other.

Q. Who came up with Apple's current bizarre and inept distribution scheme for System 7.1?

A. Aw, are you annoyed that Microsoft Corp.'s first retail operating system, MS-DOS 5.0, was dripping off the shelves in both full and upgrade forms at every software store in the country on the day of announcement, while System 7.1 still seems to be a well-kept secret unknown to most Apple dealers, and upgrades — sans manuals — are available only via phone order from Apple after you pass a little quiz to make sure you're eligible? Nobody knows who came up with this distribution scheme, although evidence points to Moe, Larry and Curly.

Please send questions to David Ramsey on CompuServe: 76702,335 or to Ask David Ramsey, c/o MacWEEK, 301 Howard St., 15th Floor, San Francisco, Calif. 94105.

is available, by manipulating some resources. This even works on older Macs, such as a Mac II, that normally do not support Omega SANE, even under System 7.0.1. (Of course, there are no guarantees from Apple or from anyone else that this is foolproof.)

You need a copy of your 7.1 System file, plus a 7.0.1 System and a resource editor, such as Resorcerer from Mathemasthetics Inc. of Chestnut Hill, Mass., or Apple's ResEdit. You also need to determine the ROM version of your machine, which you can get with such freeware utilities as Ken McLeod's MacEnvoy or John Mancino's TattleTale.

First, copy the PACK 4 and PACK 5 resources from System 7.0.1 into your duplicate System 7.1 file.

Next, translate the ROM version from hexadecimal to decimal to get the ROv# resource number for your machine. (On the Mac IIx and Quadra, for example, the ROM version is hex 067C, which equates to an ROv# resource of 1660 in decimal. The Mac II's hex 0178 ROM equates to an ROv# resource 376 in decimal.)

Open the matching ROv# resource in the duplicate System 7.1 file and add two new entries, for PACK 4 and PACK 5. (You might want to modify the version resources of this System file to note that it was hacked.)

Make sure you have a backup, then install the modified system, and you should see both the speed increase and the improved decimal-binary conversions in some applications. □

Comments on MacInTouch are welcome at 7 Parmenter Ave., Maynard, Mass. 01754. Phone (508) 897-2621. Address electronic mail to RICFORD on AppleLink or MCI Mail; to 72511,44 on CompuServe; or on the Internet to 72511.44@compuserve.com. Join us on-line in the MacWEEK Forum at location ZMC:MACWEEK on CompuServe or ZiffNet/Mac.

Script Manager

Spelling suite could help keep bloating applications in check

Numerous writers — including myself — have noted with chagrin a state of “software bloat” that seems to be getting more and more pronounced. Everyone knows that software is becoming bigger and bigger. With every vendor adding new features, it seems they are all engaged in a conspiracy to sell us larger hard disks.

One of the promises of System 7 and its program-linking capabilities has been modular software. Instead of adding more and more features to their programs, some of us hoped that developers would create smaller, more-focused programs that could work together.

So far, modular software of this sort has been notable mostly by its absence.

Word Services. One small developer, long-active in the Mac market, has taken a step toward providing a standard that can ease software bloat. Working Software Inc. has developed a series of protocols, called

Word Services, that enables standard communications via Apple events between compatible text editors and spelling checkers.

Word Services defines functional roles: clients and servers. A client is any program, such as a text editor, that can use the services of something like a spelling checker. A Word Services-savvy text editor can have its text spell checked (or grammar checked) by any Word Services-compatible spelling checker (or grammar checker).

The Word Services suite allows batch checking, in which an entire document is spell checked at once, and interactive checking, which works on smaller portions of the document, such as the selection.

Words everywhere. Beyond word processors, text editors and desktop publishing programs, there is no reason that other programs, such as databases, spreadsheets or telecommunications programs, couldn't take

advantage of the Word Services suite to allow their text to be checked. Smaller developers now have a means of adding spell checking to their products without having to write or license their own spelling checkers. But even better, Word Services might let users exercise their preference in spelling checkers and have that choice work in all their programs.

Will the standard make it? A couple of things make me think Word Services has the potential to go somewhere. First, Working Software basically is giving away the code, as UserLand Software Inc. did with the Frontier SDK.

Secondly, WordPerfect Corp. has announced that the next version of its flagship word processor will support Word Services along with AppleScript. WordPerfect's adoption of the suite might lead other developers to include it as well; it also should encourage more companies to create Word Services-savvy spelling checkers, grammar checkers and the like.

I urge other developers, including in-house programmers who write text-editing applications, to at least study the suite — after all, it can be implemented at no direct financial cost. Maybe in the long run it will help stem soft-

ware bloat. I'd be happy to remove just one spelling checker from my crowded hard disk; removing more than one would be terrific.

A demonstration version of Spells-Well with Word Services is in Library 2 of the MacApp forum on CompuServe (GO CIS:MACAPP) under the name SPLSWL.SEA. A version of WritesWell supporting Word Services is in the same library under the name WRTSWEL.SEA.

More files are located in the MacDev CompuServe forum (GO CIS:MACDEV). The suite definition with source code also can be found in the Developer Support folder on AppleLink and on a disk from BMUG Inc. of Berkeley, Calif.

Working Software Inc. is at 740 Front St., Suite 318A, Santa Cruz, Calif. 95060. Phone (408) 423-5696; fax (408) 423-5699. □



STEVE MICHEL

If you have any user scripting comments or questions, contact me on ZiffNet/Mac (72511,151), AppleLink (SMICHEL), or at MacWEEK's mailing address.

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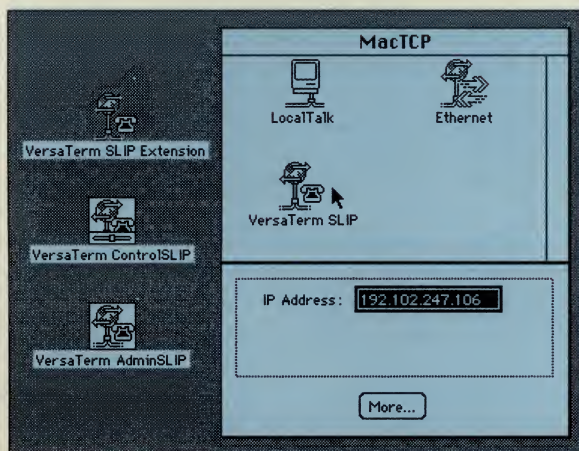
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VersaTerm SLIP for MacTCP

Award-winning, System 7.0 savvy, VersaTerm v4.6 and VersaTerm-PRO v3.6, (the DEC and Tektronix terminal emulation standards), now provide SLIP support for Apple's MacTCP.

- In addition to providing SLIP (Serial Line Internet Protocol) access to VersaTerm's suite of TCP/IP services: Telnet, FTP Client, FTP Server and Time Client, most applications that use MacTCP will also be able to take advantage of VersaTerm's SLIP support.
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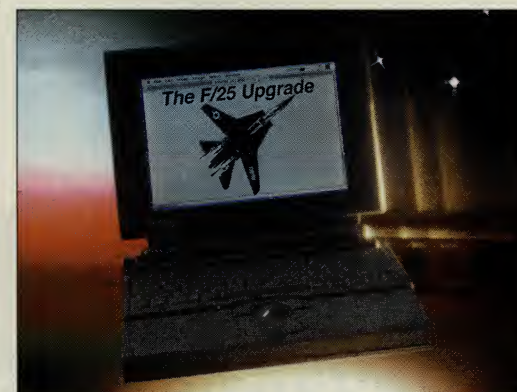
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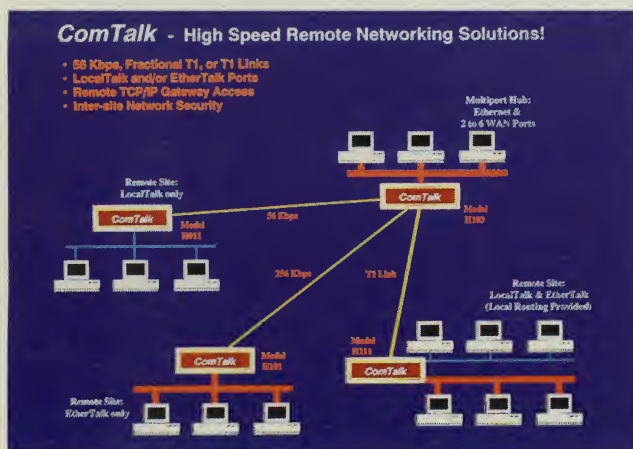


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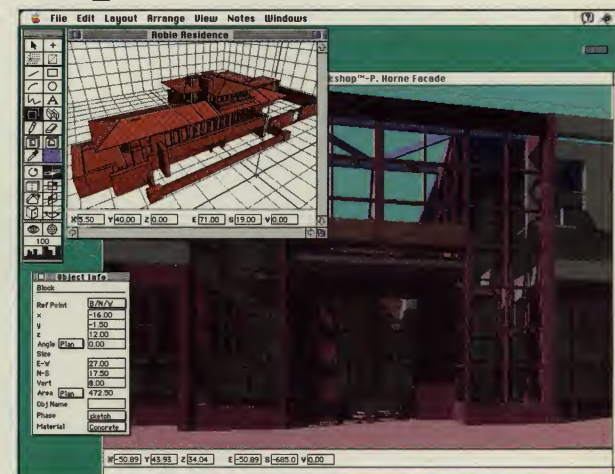
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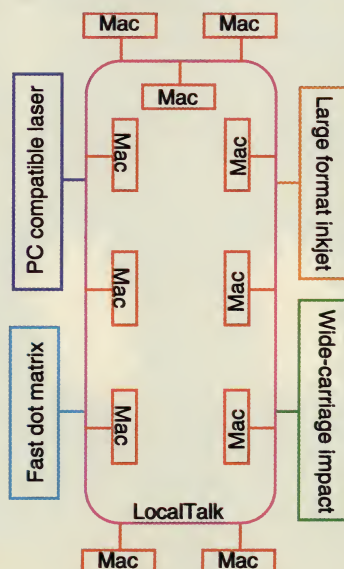
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DoubleColor LC Video Board	409
DoubleColor SX Video Board	369
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ETC DataDrive 213M - New	399
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7 SII  Seiko Instruments CM-1445 14" Monitor Using Trinitron technology, this 14-inch RGB monitor is over a \$100** cheaper than Apple! \$429**	8 Seiko Instruments CM-1760 16" Monitor Also using the Trinitron tube, the CM-1760 offers a razor sharp image at a great price. \$1199**	9 	10 CLUB 24 Extended Service Programs Service programs for your Mac start as low as \$10.00 a month. Is your warranty about to run out? Call! 800-945-1622	11 WE BUILD CUSTOM CONFIGURATIONS EVERY DAY! If you need a custom configuration. Give Mac and MORE a call!!!	12 4MB x 8 70nsec SIMM 	13 ETC DataDrive 128R Magneto-Optical Drive Featuring a Teac 128MB M-0 Drive, the 128R comes complete with one cartridge! \$1,179**
14  E-Machines T-16 II Undoubtedly, this is the best selling 16-inch color monitor around. Gives you 832x624 WYSIWYG image. \$1,299**	15 1MB x 8 70nsec SIMM  \$29	16  ETC DataDrive 1.2T External 1.2GB Drive Using a Toshiba 1.2GB drive this is the perfect drive for anyone needing GBs. \$1,599**	17  	18 SuperMac ThunderStorm Speed up the filters in PhotoShop using the latest in accelerator technology. \$839**	19 Mac and MORE On-Line BBS 24-Hours a Day Service programs for your Mac start as low as \$10.00 a month. Is your warranty about to run out? Call! 813-884-7466	20  ETC DataBeam TCP Thermal Wax Printer A color printer with terrific 300dpi output and a price that is just as sharp! \$3,699**
21 SONY 14-inch Monitor The creator of the Trinitron tube, Sony's 14-inch monitor is the standard by which all others are judged. \$659**	22 DAYSTAR DIGITAL 50MHz PowerCache with Math Coprocessor Drop one of these in your Macintosh and race past everyone else. Now Low Price! \$859**	23  QMS 860 HammerHead 11x17 LaserWriter Provides PostScript output on tabloid size paper at an amazing 8 pages per minute. \$4,099**	24 radius Radius Rocket 33 33MHz Accelerator When run with RocketShare, this accelerator is like having a 2nd Mac on your desk. \$1,999**	25 Phone Network Adapter  \$15	26  TI PS-17 LaserWriter With AppleTalk At this price, you can't go wrong in upgrading your output to 300dpi with this printer. \$1,299**	27 UMAX UMAX UC-630 600 dpi Color Scanner The mainstay for most desktop publishers, this color scanner is easy-to-use! \$1,149**
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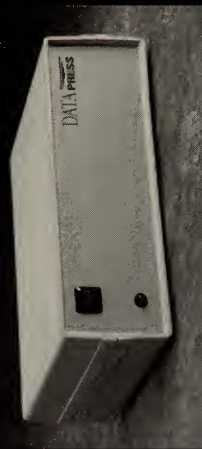
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☒ **FCC, UL, TUV, VDE, CSA certification.**

☒ **A company you can count on.** La Cie has successfully served our customers with award-winning products since 1986. Quantum since 1980. With more than a billion dollars in revenue, La Cie and Quantum allows you to buy with full confidence in our ability to deliver tomorrow's technology along with long-term service and support.

Call us now for our new free Winter 1993 catalog!

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Switchable
Termination!

Universal
Power
Supply!

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Money Back
Guarantee*

Quality inside and out.

From
\$299

La Cie's Powerbook and Pocket drives are built right from the start.

Performance in the palm of your hand.

Our sporty 40MB, 80MB, 120MB and 160MB PocketDrives are built for mobility. Travel light (under 10 ounces). Travel fast (19ms seek time). The PocketDrive features Quantum's new 2 1/2" drive technology, whisper quiet operation and our exclusive switchable external termination. Pack in your pocket, purse or briefcase. PocketDrives come complete with our exclusive T-connector adapter for connectability to almost any Mac. For more connectivity, try our optional PocketDock desktop cable. Our T-connector and PocketDock make the PocketDrive system the most versatile and convenient pocket-size drive—anywhere.

Driving power by the book.

Here's Quantum horsepower for PowerBook owners. Available in 80MB, 120MB and 160MB capacities, La Cie's high-performance PowerBook drives come standard with Quantum's high-mileage 2 1/2" drive technology. Lightning fast. Lexus quiet. Easy to install. La Cie PowerBook drives come complete with the correct brackets for convenient internal installation and an *outstanding* easy-to-read, easy-to-follow instructional and owners manual. And as always, each drive is fully equipped with System 6, System 7, our number one rated Silverlining disk management software and one of the industry's longest warranties.

C H E C K O U R L I S T

- ☒ **Disk-for-disk or better replacement.** If you have a problem with your La Cie drive while under warranty, we'll ship you a replacement within 48 hours. We've also been known to replace disks with better ones, rather than make a customer wait. That's how important your drive is to you. That's how important you are to us.
- ☒ **Unique switchable active termination under the hood.** Only La Cie hard drives provide simple, straight forward termination for your SCSI bus. No need for external terminators, just flip a switch. Our advanced circuitry is smart too, termination power is provided only if it is needed.

High speed safety.

From
\$199



La Cie's Tsunami and Cirrus drives like to be driven hard and fast.

Lap the competition.

La Cie's Cirrus and Tsunami drives outpace the competition for performance and value. That's because they're loaded with quality features like Quantum mechanisms, whisper quiet fans, 12ms access time, award-winning chassis designs and our Silverlining disk management software. From 40MB to 1.2GB take home your pick of load capacities. Each delivers the streamlined styling, diminutive footprint and single-handed convenience of the true portable. And that's not all. All Cirrus and Tsunami drives offers the La Cie's exclusive active switchable termination. No wonder they're rated tops in their class, year after year.

Never be afraid to internalize your drives.

If the fear of installation has deterred you from satisfying your desire for a more powerful internal drive, stop fretting. La Cie not only offers a full range of quality Quantum drives for your Mac, PowerBook or Quadra, we make them easy to install. Each La Cie disk comes complete with the correct bracket hardware for internal installation, and an outstanding easy-to-read, easy-to-follow instruction manual, plus all the no-extra-charge, toll-free telephone technical support you need to make the job quick, convenient, and painless.

Test us for real and call now for fast, friendly service!

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**Switchable
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Supply!**

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Guarantee***

The drives you love from the company you trust, La Cie, a Quantum company.

Our lot has great selection



Internal, ZFP™, ZFP+™, Cirrus™ & Tsunami™ Drives

Our hard drives features a wide selection of capacities and quality brand-name mechanisms—all at very affordable prices. All drives have switchable active termination, efficient, quiet fans and universal power supplies.*

Quantum	Internal	ZFP	Cirrus	Tsunami
40MB (3 1/2")	\$199	\$299	\$319	\$349
85MB (3 1/2")	\$279	\$379	\$399	\$429
120MB (3 1/2")	\$399	\$499	\$519	\$549
127MB (3 1/2")	\$339	\$439	\$459	\$489
170MB (3 1/2")	\$369	\$469	\$489	\$519
240MB (3 1/2")	\$589	\$689	\$709	\$739
525MB (3 1/2")	\$1149	\$1249	\$1269	\$1299
700MB (3 1/2")	\$1329	\$1429	\$1449	\$1479
1.05GB (3 1/2")	\$1669	\$1769	\$1789	\$1819
1.2GB (3 1/2")	\$1899	\$1999	\$2019	\$2049
80MB (2 1/2") for Powerbook	\$369	See PocketDrive		
120MB (2 1/2") for Powerbook	\$469	See PocketDrive		
160MB (2 1/2") for Powerbook	\$699	See PocketDrive		

Seagate	Internal	ZFP+	HP	Internal	ZFP+
1.2GB (3 1/2")	\$1799	\$1899**	1.05GB (3 1/2")	\$2099	\$2199**
650MB (5 1/4")	\$1299	\$1449	700MB (5 1/4")	\$1499	\$1649
1.2GB (5 1/4")	\$1749	\$1899	1.2GB (5 1/4")	\$1989	\$2139
1.6GB (5 1/4")	\$2299	\$2449	1.6GB (5 1/4")	\$2399	\$2549
2.1GB (5 1/4")	\$2949	\$3099			
2.4GB (5 1/4")	\$3299	\$3449			
			DEC	Internal	ZFP+
			1.05GB (3 1/2")	\$1999	\$2099**

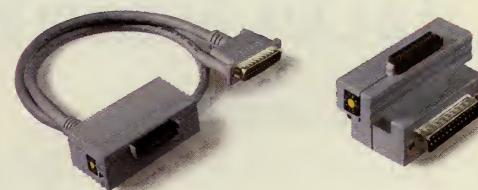
**Available only in our award winning Cirrus and ZFP half-height cases.



PocketDrive™

Pack it in your pocket, purse or briefcase. PocketDrives offer convenient desktop connection at a great price.

40MB (2 1/2") incl. T-connector	\$299
80MB (2 1/2") incl. T-connector	\$519
120MB (2 1/2") incl. T-connector	\$619
160MB (2 1/2") incl. T-connector	\$849



Optional PocketDock Cable	\$59
Extra T-Connector	\$59
110V Accessory Kit	\$69

Powerbook Internals

Pack more power in your Powerbook. Comes with brackets and instructions.

80MB Powerbook Internal	\$369
120MB Powerbook Internal	\$469
160MB Powerbook Internal	\$699

Silverlining™

Hailed as one the most powerful and useful hard disk management software available, Silverlining offers unique features found no where else! Give your hard disk a Silverlining.

Silverlining	\$149
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and a friendly sales staff.

FREE!
Cleaning Cartridge
\$19.95 value*



Cirrus Optical

Our quiet Cirrus Optical drives offer 128MB removable media storage, compact portability and fast 38ms performance. Includes one free cartridge (\$79 value).

	Internal	External
128MB 3 1/2" Optical Drive with Retrospect	\$1399	\$1499
128MB Optical Disk	\$1499	\$1599
		\$79

*While supplies last

Cirrus Backup

Our Cirrus backup solutions have the power to handle large backup jobs. Includes Retrospect™ and 1 free tape.

	Internal	External
155MB Tape Drive		\$549
600MB Tape Drive	\$699	\$799
1.3-2.0GB DAT	\$1249	\$1349
4-8GB Comp. DAT	\$1549	\$1649

88C
Now Available!



ZFP Removable

Our 44-88MB removable media drives deliver Syquest technology in a zero footprint case. Includes 1 free cartridge.

44MB Drive	\$499
88MB Drive (88C)	\$719
44MB Cartridge	\$63
88MB Cartridge	\$98

ExpressDrive™

Here's tight security and portability. La Cie Express Drives offer removable drive convenience and Quantum quality.

ExpressDrive Chassis	\$399
50MB Quantum LPS Drive	\$299
100MB Quantum LPS Drive	\$419
120MB Quantum LPS Drive	\$469
240MB Quantum LPS Drive	\$819



Silverscanner II™

One look at the image above should convince you that our next generation Silverscanner can really perform! Superior line art, detailed gray-scale and gorgeous color are the trademarks of this one pass, 24bit, high resolution, feature-packed scanning machine. Just scan it!

La Cie Silverscanner II

with Color It!
and Read-It O.C.R. Pro! **\$1599**

with Photoshop
and Read-It O.C.R. Pro! **\$1999**

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and Read-It O.C.R. Pro! **\$2099**

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The drives you love from the company you trust, La Cie, a Quantum company.

Great for your image.

Introducing!
Silverscanner II
With transparency
and sheet feeder options.

Silverscanner II makes you look great with fabulous color, rich detailing.

Improve your image.

Continuing our award winning tradition of providing outstanding scanning solutions for the Macintosh, La Cie proudly announces Silverscanner II. It is so good, we used it to produce this page. Gorgeous color. Fine image detail. Excellent tonal range. The proof is right in front of you.

Great color from the start.

With Silverscanner II, you get great color and gray-scale in one pass. That's because Silverscanner II's built-in image control operates on 9 bits of data *before* conversion to 8 bits per color. You get clean, bright scans with excellent detail and tonal range in highlight and shadow areas in one pass. Easy for the beginner, but with all the powerful control the advanced user craves.

Hug the curves.

When comparing line art, Silverscanner II really shines! At 1600 dpi, you get what amounts to an electronic stat.

Superior software at the controls.

La Cie's powerful plug-in modules have been hailed some of the best software ever written for flat-bed scanners. And with features like dynamic color preview, independent color (R,G,B)/gamma correction/contrast/brightness controls, nine scan modes, savable scan settings, color dropout and magnified previews, proof scans, 25% to 400% scaling in 1% steps and 25 dpi to 1600 dpi in 1 dpi steps. And now with an electronic densitometer, color histogram and automatic tone adjustment, all interactive in the preview. How's that for an image building machine!

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Optical Breakthrough!

APS Epson MO Drive, \$1199



**Internal
Epson MO
\$1099**

Transport, store and access multi-megabyte documents on low-cost, high-density MO cartridges with Epson's Magneto Optical Drive system. As an alternative to tape back up or other

removable cartridge archive systems, Epson's MO stores 128MB on durable \$53 diskettes. Carry them in your pocket, drop them in the mail to your output service—these cartridges can take a beating.

Three-pass write assures data security

With the dependable security of a three-pass write, keep copies of scanned artwork, multimedia or large documents for future reference or emergency back up.

Easy-access archiving

Based on Epson's OMD-5010 mechanism, this state-of-the-art drive supports an average seek time of 35 milliseconds and sustained read times approaching 700KB per second.

The three-pass write occurs at approximately 250KB per second in a Mac environment, making it among the fastest 128MB MO units currently shipping.

This Epson MO is fully compatible with all ISO and ANSI

specifications, so cartridges can be readily accessed on other-brand MO drives.

In a specially designed external enclosure (with extra cooling for reliable operation), APS's Epson MO is priced at \$1199, including one MO cartridge. An internal version for Mac Quadra 900 or 950 is \$1099. Additional cartridges are available at \$53; or \$240 for a package of five.

The APS Epson MO carries a one-year manufacturer's warranty and includes APS's award-winning service and unlimited toll-free technical support.

Go ahead and buy it

Move up to this next-generation, transportable storage solution. Call APS to order an Epson MO today!

**30-Day
Money-Back
Guarantee**

**Unlimited
Toll-Free
Technical
Support**

**Disk-For-Disk
Replacement
Warranty**

**24-Hour
BBS with
Our Latest
Software**

**Bright,
Knowledgeable
Sales
Associates**

* 30-day money-back guarantee • All drive products carry a 30-day money-back guarantee. Your risk in the transaction is the cost of shipping.
• Disk-for-disk replacement warranty • SyQuest, most Quantum, Maxtor and DAT drives are warranted for two years, Maxtor 1.2, 1.7 GB and Fujitsu drives are warranted for five years. WREN, Quantum 2.5" drives, TEAC drives, all CD-ROMs, MOs and SyQuest carts are warranted for one year. Toshiba 830 is warranted for three years.
• Prices and specifications subject to change without notice. Refused orders subject to restocking fee.

* All our hard drives include brackets, cables, cords and LEDs required for operation with the specified Macintosh. All hard drives from APS Technologies come preformatted with Apple's System 7.0.1 software, at least 9.2 MB of compacted publicly-distributable software, and APS Technologies' ALLIANCE POWER TOOLS SCSI formatter/hard disk partitioner.
• Toll-free technical support as often or for as long as you need. Regular hours are 8 am to 8 pm Monday thru Friday, 10 am to 4 pm Saturday, Central Time.

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International: 1-816-478-8300. FAX: 1-816-478-4596 (24 Hours).
Toll Free UK: 0800-897-545. Australia: 0014-800-125-875.

1-800-645-5401



Rugged and Reliable APS Fujitsu 520 MB, \$999



We're not alone in recommending our APS Fujitsu 520MB 3.5" drive—MacWorld Labs recently voted **our** drive as best in class. With sustained transfer rates of 1.7MB per second and a blazing seek

speed of 10.3ms, the APS Fujitsu 520 offers solid performance and reliability at a terrific price. And, backed by our 5-year warranty and award-winning technical support, the APS Fujitsu 520 is a fantastic value.

Quantum

MB	INTL	EXTL
240	\$499	\$579
525	1079	1149
1225*	1699	1769

*Includes new 5-year warranty

Quantum

ELS Low Profile Drives

MB	INTL	EXTL
42	\$185	\$249
85	229	299
127	329	399
170	369	429

Fujitsu

MB	INTL	EXTL
520	\$999	\$1099
1.2G	1449	1549
2.0G	2399	2499

Micropolis

MB	INTL	EXTL
560	\$1299	\$1369
1.1G	1699	1799
2.0G	2699	2799

Maxtor

MB	INTL	EXTL
120	\$299	\$379
213	399	479
340	699	769
535	999	1079
1.2G**	1549	1649
1.7G**	1899	1999

**Includes 5-year warranty



APS PowerBook Companion Cases

The Perfect Home for Your Original PowerBook Drive

AC only	\$79
AC/DC (Battery-Powered)	179

Quantum

PowerBook Go•Drives

MB	INTL	EXTL
80GRS	\$349	\$499†
120	469	599†
160GRS	599	729†

†Battery-powered Companion Case for the PowerBook

Toshiba

830	\$1099	\$1169
1.2G	1599	1669

APS Technologies

Great Prices. Priceless Support!

APS Compression DAT, \$1599 blows away the competition



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Technical
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Disk-For-Disk
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24-Hour
BBS with
Our Latest
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The *Macworld* Editors' Choice for high-capacity back up, APS's Compression DAT stores up to 5GB per 90m tape cartridge. Need fast, high-capacity back-up? This \$1599 DAT offers one of the

best archiving solutions on the market. Internal models for Quadra 900 and 950 are just \$1499. Only need to squeeze 1.2 to 2GB onto a cartridge? Take a look at APS's non-compression DAT, now just \$1299.

DAT

MB	INTL*	EXTL
APS _{DAT}	\$1499	\$1599

2.6-5 GB Compression DAT

APS _{DAT}	1199	1299
--------------------	------	------

Desktop and portable units
Archive-based mechanisms

*Quadra 900 and 950



Epson

Model	INTL	EXTL
MO*	\$1099	\$1199

*Magneto optical drive

TEAC

155 MB Tape Back Up	\$499
600 MB Tape Back Up	799

Digital Audio Tapes

Maxell 60/90m\$12/16



New!

SyQuest

The 5110c reads & writes 44 & 88 carts!

Model	EXTL	SQ5110c	\$599
SQ555	\$399	Dual 44	799
SQ5110	499	Dual 88	959

*30-day money-back guarantee • All drive products carry a 30-day money-back guarantee. Your risk in the transaction is the cost of shipping.
• Disk-for-disk replacement warranty • SyQuest, most Quantum, Maxtor and DAT drives are warranted for two years. Maxtor 1.2, 1.7 GB and Fujitsu drives are warranted for five years. WREN, Quantum 2.5" drives, TEAC drives, all CD-ROMs, MOs and SyQuest carts are warranted for one year. Toshiba 830 is warranted for three years.
• Prices and specifications subject to change without notice. Refused orders subject to restocking fee.

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• Toll-free technical support as often or for as long as you need. Regular hours are 8 am to 8 pm Monday thru Friday, 10 am to 4 pm Saturday, Central Time.

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January Specials

NEC

MacUser **MultiSync® 4FG™**
\$749

Great for color-intensive business graphics, presentations, windowing applications, and more 15" diagonal, .28mm dp 1024x768 non-interlaced.

MultiSync 3FGx™ (MacUser) **\$639**

NEC MultiSync 5FG **\$1299**

MacUser **MultiSync 6FG**
\$2349

Large 21" screen; great for color business applications; .28mm dp; 1280 x 1024 non-interlaced

NEC FG8x card **\$659**
8-bit color NuBus card with QuickDraw™ acceleration

NEC FG24x card **\$1269**
24-bit color NuBus card with QuickDraw acceleration

Silentwriter® Model 95f **\$1369**

- 2MB RAM / 6ppm printing
- 35 Adobe fonts / 14 HP fonts
- Automatically switches interface between Mac & DOS platforms
- Accepts fax upgrade

3-Year ON-SITE Warranty

Silentwriter Model 95fx **\$1999**
Same as Model 95f; includes factory installed PostScript® Fax option

Fax Upgrade for Model 95f **\$499**

2MB Memory for Model 95 **\$125**

Toner Cartridge for 95/97 **\$175**

Silentwriter Model 97 **\$1799**
10 pages per minute; 2MB RAM; 35 Adobe fonts; 14 HP fonts. 3-year On-site warranty

Silentwriter Model 97fx **\$2359**
Same as Model 97; includes factory installed PostScript® Fax option

CD-ROM Drives

CDR-25 Express™ Bundle **\$429**
CDR-25 with 1 pair amplified stereo speakers, stereo headphones, and 10 new CD titles.

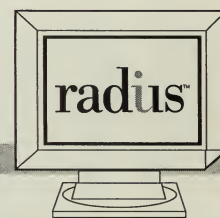
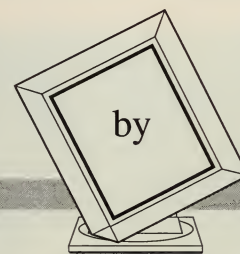
CDR-74 w/ CD Gallery **\$899**
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Radius™ PrecisionColor™ Pivot® Display

15-inch, dual-orientation, anti-glare, color full page display compatible with all Color Pivot interfaces (256 colors) and most Precision Color interfaces. Works with Quadra's built-in video. Also compatible with PowerView™ for PowerBooks and Classic II.

\$949



Radius Color Display/21™ **\$2999**

21-inch color display for Macintosh (NuBus™) computers. Displays two facing pages in a resolution of 1152x870 at 75 Hz and 78 dpi. Also supports 1072x810 for WYSIWYG (72 dpi) display.

Radius Monochrome

Two Page Display/19. **\$849**

19-inch, landscape, Two Page display display for Macintosh and PC computers. Macintosh resolution is 1152x 882 at 71Hz at 82 dpi.

Radius PrecisionColor™

Display/20. **\$2349**

20-inch multi-frequency Trinitron® color display for Macintosh and PC computers. Connects virtually to any video interface card. "On-the-fly" resolution switching from 640x480 to 1152x882 on the Mac, and 320x200 to 1280x1024 on the PC.

Radius Graphics Cards & Interfaces

Color Pivot Interfaces (NuBus, IIsi, LC, SE/30) **\$499**

PowerView™ (PowerBook and Classic II) **\$494**

Two Page Display interface (NuBus, IIsi, SE/30) **\$379**

PrecisionColor 8X Card **\$749**

PrecisionColor 8XJ Card **\$489**

PrecisionColor 24X Card **\$1649**

PrecisionColor 24XP Card **\$499**

Radius Rocket 25i™ **\$1249**

Radius Rocket 33™ **\$1999**

VideoVision™ **\$1929**

Radius ImpressIt™ software **\$149**

Radius PrecisionColor software **\$247**

RocketShare™ **\$429**

Complete line of Radius products available. Call for more information.

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Transparency/Slide Scanner

Option for UC-630 **\$749**

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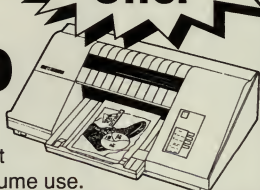
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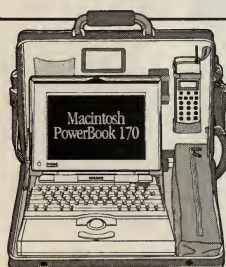
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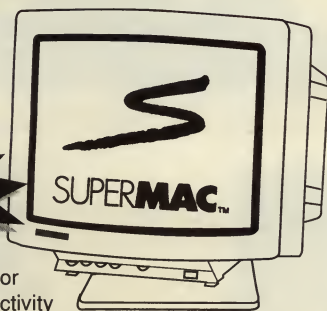


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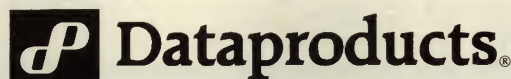


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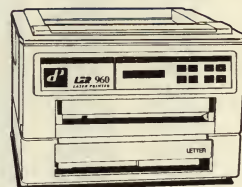
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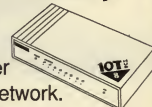
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**January
Specials**



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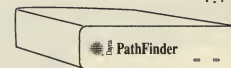
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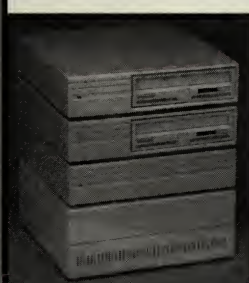
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Internal 88mb SyQuest (for Quadra 900&950)	\$465
Internal 88mb C SyQuest (for Quadra 900&950)	\$595
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SyQuest Dual 88mb (*One Cartridge Included)	\$895
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LPS 525mb	10ms	3.5"TH	\$1045	\$1105
ELS 42mb	19ms	3.5"TH	\$185	\$245
ELS 85mb	17ms	3.5"TH	\$235	\$295
ELS 127mb	17ms	3.5"TH	\$305	\$365
ELS 170mb	17ms	3.5"TH	\$345	\$405
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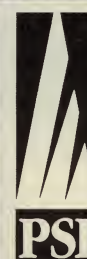
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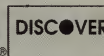
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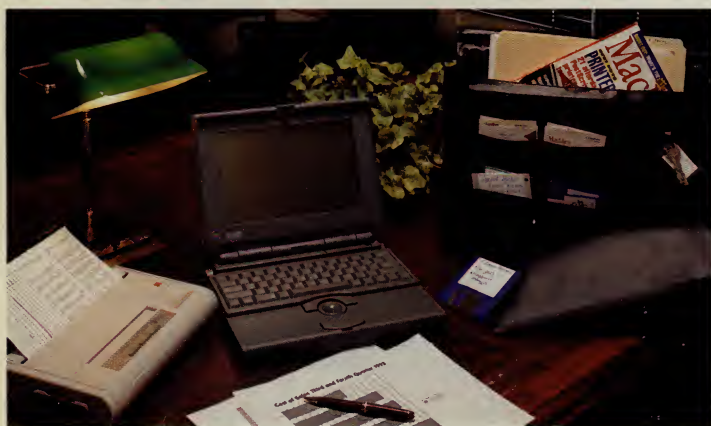
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SuperMac 21" Mono/Grayscale	989	—								
C. RasterOps 20" Trinitron Multi-Mode	\$2,329	Trinitron								
Radius Precision Color 20"	2,389	Trinitron								
RasterOps 20" Hitachi Color	1,469	Hitachi								
D. RealTech 20" Trinitron Multi-Mode	1,895	Trinitron								
E. SuperMac 20" (SuperMatch)	1,499	Hitachi								
SuperMac 20" (SuperMatch Dual-Mode)	2,499	Trinitron								
F. NEC 17" 5FG Color	\$1,589	Toshiba								
RasterOps 16" (RasterOps Sweet 16)	1,249	Panasonic								
G. RealTech 17" (RealTech Multi-Mode)	995	Hitachi								
H. Sony 17"	1,189	Trinitron								
I. Seiko Instruments 17" (1760)	1,149	Trinitron								
J. Radius Precision Color Pivot (15")	\$959	Non-Trinitron								
K. RealTech 15" Grayscale	449	—								
L. Seiko Instruments 14" Color 1445	479	Trinitron								
M. Sony 13" Color	689	Trinitron								

Monitors



PowerBooks



These PowerBook 160s and PowerBook 180s each include: 8 Mb of RAM, expandable to 14 Mb; display with 16 grayscale levels; 1.4 Mb floppy disk drive.

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PowerBook 160 with 8/40.....\$2639
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Charger/Reconditioner.....169
Auxiliary Power Pack.....169
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The PowerBook Duo 210 8/80 and PowerBook Duo 230 8/80 transform into desktop computers by using the optional Duo Dock. Each PowerBook Duo 210 or 230 includes:

- 640 x 400 Supertwist liquid crystal display with 16 grayscale levels
- 8 Mb of RAM, expandable to 24 Mb
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- Optional internal modem

PowerBook® Duo 210 8/80

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Lease: \$69/month

25 MHz 68030 microprocessor. 80 Mb hard drive.

All PowerBooks listed here are equipped with a 19mm trackball.

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MassMicro FM 24/96 PB.....189
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Scanmaker II Includes ScanMatch color calibration software	\$909	600	14	8.5 x 11	■			Includes limited version of Adobe Photoshop
Scanmaker IIXE Includes ScanMatch color calibration software	1,179	600	14	8.5 x 11	■			Includes full version of Adobe Photoshop
Scanmaker 1850 Slide Scanner	1,569	1850	14	2.5 square inches		■		Includes full version of Adobe Photoshop
REALTECH								
Scan 800 Optional Adobe Photoshop	\$1,199 200	800	200	8.5 x 11.75	■			Includes Scan-Match color calibration software
Scan 800 with Transparency Option	1,695	800	200	8.5 x 11.75	■	■	■	
UMAX								
UC 630	\$1,119	600	51	8.5 x 14	■			Includes full version of Adobe Photoshop
Transparency Option	729	(600)	(51)	6 x 9	■	■	■	
UC 840	1,289	800	51	8.5 x 14	■			Includes full version of Adobe Photoshop
Transparency Option	729	(800)	(51)	6 x 9	■	■	■	
UC 1200S	3,019	1200	51	8 x 11.8	■			Includes full version of Adobe Photoshop
Transparency Option	729	(1200)	(51)		■	■	■	



The photo above is a 300 dpi image of an 8 x 10 transparency. It was scanned on the RealTech Scan 800 with Transparency Option, then adjusted with ScanMatch and color-corrected with Adobe Photoshop.

Scanners & Printers

Laser printers

The right printer can do wonders for your productivity. Do you need speed? Adobe PostScript Level 2? Do you need to print a lot of pages each month?

	Dpi	Engine speed RAM	Interpreter Microprocessor	Duty cycle Paper trays	SCSI port Interfaces	Resident fonts Misc.	QMS
We offer dozens of printers, including the QMS line...too many to show in this ad! If you don't see what you want listed here, please call us.							
NEC Silentwriter Model 95 $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$							
■ 300 dpi ■ 6 pages/min. ■ 2 Mb RAM (expandable to 5 Mb)			■ Adobe PostScript Level 2 ■ Motorola 68000 processor	■ 6,000 pages per month ■ Built-in envelope feeder & 250-sheet tray; optional 2nd tray available in letter or legal sizes	■ No SCSI port ■ Appletalk RS-422, parallel, and RS-232C	■ 35 Micro-fine toner and NEC's patented "Sharp Edge" technology create sharp black print quality	
\$1,469 Lease: \$40/month							
NewGen 400P $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$							
■ 400 dpi ■ 4 pages/min. ■ 4 Mb RAM (expandable to 16 Mb)			■ PostScript compatible ■ Weitek XL-8220 processor	■ 3,500 pages per month ■ Optional 2nd paper drawer	■ Optional SCSI port ■ Appletalk RS-422, parallel, RS-232C	■ 35	
\$1,879 Lease: \$51/month							
RealTech Laser $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$							
■ 300 dpi ■ 9 pages/min. ■ 2 Mb RAM (expandable to 10 Mb)			■ Adobe PostScript Level 2 ■ Weitek RISC processor	■ 5,000 pages per month ■ Optional 2nd paper tray & cassette feeder are available for \$250 (for both)	■ SCSI port ■ Appletalk RS-422, parallel, and RS-232C	■ 35 ATM font rendering technology builds raw type characters 4 to 5 times faster, enabling the RealTech Laser to print complex documents faster than other printers in its price range.	
\$1,595 Lease: \$44/month							
Texas Instruments MicroLaser XL Turbo $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$							
■ 300 dpi ■ 16 pages/min. ■ 2.5 Mb RAM (expandable to 10.5 Mb)			■ Adobe PostScript Level 2 ■ Weitek RISC processor	■ 25,000 pages per month ■ Optional 2nd paper drawer	■ Optional SCSI port ■ Appletalk RS-422, parallel, and RS-232C	■ 35	
\$2,795 Lease: \$77/month							
Texas Instruments MicroLaser Plus $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$							
■ 300 dpi ■ 9 pages/min. ■ 1.5 Mb RAM (expandable to 4.5 Mb)			■ Adobe PostScript Level 1 ■ Motorola 68000 processor	■ 10,000 pages per month ■ Optional 2nd paper drawer and envelope feeder	■ Optional SCSI port ■ Appletalk RS-422, parallel, and RS-232C	■ 17 Available with 35 resident fonts (\$1349)	
\$1,249 Lease: \$34/month							
The only 11x17 printer with Adobe PostScript Level 2 for less than \$3500.							
■ Choice of 300 or 400 dpi ■ 15 ppm (letter size); 8 ppm (tabloid size) ■ 4 Mb RAM (expandable to 16 Mb)			■ Adobe PostScript Level 2 ■ Weitek RISC processor (and ATM font rendering technology)	■ 20,000 pages per month ■ Two paper trays included (one tray for letter size; one tray for tabloid size.)	■ SCSI port ■ Three interface ports: Appletalk RS-422, IBM PC parallel, and RS-232C.	■ 35	
\$3,195 Lease: \$88/mo.							
QMS 860 Hammerhead $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$							
■ 600 dpi ■ 8 ppm (letter size); 4.6 ppm (tabloid size) ■ 12 Mb RAM (expandable to 32)			■ Adobe PostScript compatible ■ Intel 80960CA RISC processor Three interface ports: Appletalk RS-422, IBM PC parallel, and RS-232C.	■ 10,000 pages per month ■ Optional 2nd paper cassette	■ SCSI port ■ Optional Ethernet ■ 39 fonts		
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"...be forewarned: PostScript-clone printers still have a long way to go before they can rival true Adobe PostScript printers."

Quote from MacUser September 1992 issue, "Personal PostScript Printers" by Bruce Fraser.

★★★★★ MACWORLD MAGAZINE September 1992

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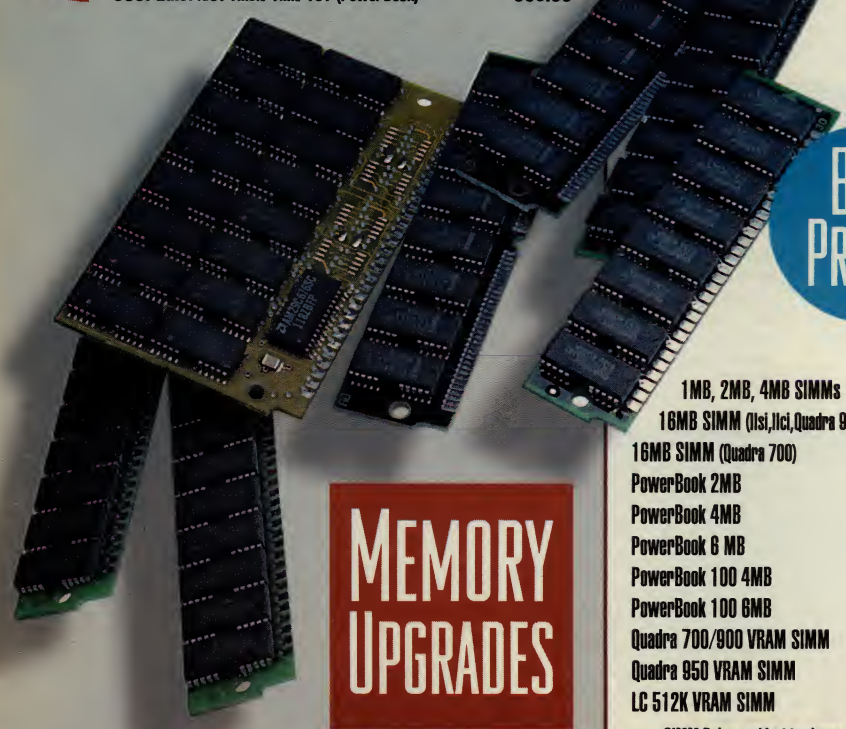
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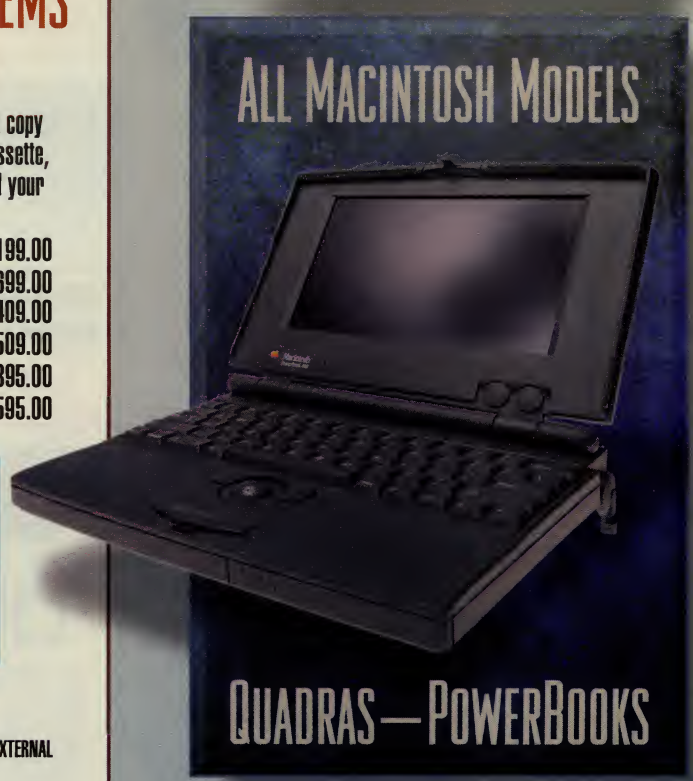
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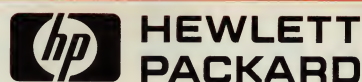


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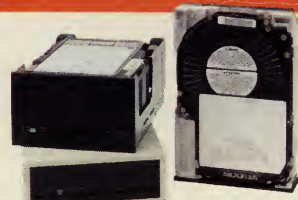
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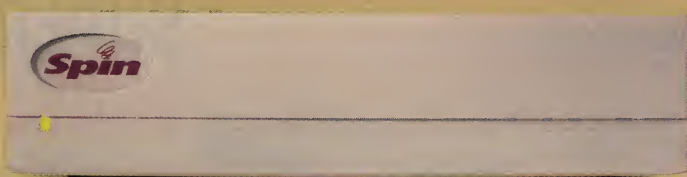
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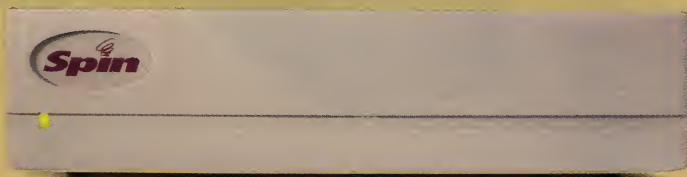
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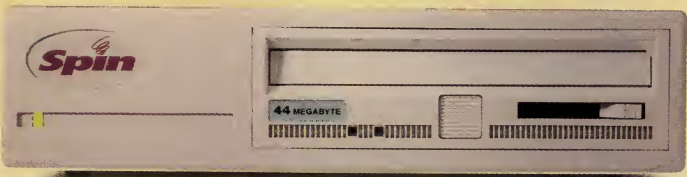


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With Retrospect.....**1498.00**

The NuDesign 2.1 & 5.0 Gig Dat Drives



The NuDesign 3.5" Optical Drive



256mb in your shirt pocket at a great price!

The NuDesign 3.5" Optical is MacWorlds Editors Choice!

"Fast, inexpensive, good technical support, easy to use--this is a rare combination of qualities for a storage device." MacWorld 11/92

With the 64k read ahead cache, the short seek scanning function and a 3mbytes per second burst transfer rate you will find that these drive competes well with hard drives.

Totally Compatible ANSI/ISO Standard- Following the ANSI/ISO standard assures that your 128mb optical drive will always be able to interchange discs with other ISO standard drives. The 256 will read and write to all standard ISO disks as well

Lowest Cost per megabyte- With 3.5 optical media at only \$49.00 per 128mb disc your cost per megabyte is only 38¢, a fraction of the costs of Syquest or hard disks.

Includes Hard Disk Tool Kit from FWB- This is the program recommended for Optical drives by MacWeek Editors.

NuDesign

128mb 3.5" Optical Drive.....**998.00**

256mb 3.5" Optical Drive**1798.00**

MAC DIRECT
Specialists in Mac Storage

60 East Chestnut - 145, Chicago, IL 60611

Visa, Mastercard, Amex, COD, Telecheck Approved Checks, Gov., Corp., Univ., P.O.s welcome. Factory warranty. Bracket, cables and software included. 30 Day Money back Guarantee covers drive products only. Return Authorization number required for returns. Prices, terms and availability subject to change without notice.

Hours: 8:30 - 8:00 CST, Saturdays

10:00 - 4:00

Technical Service and Order

Tracking (8:30-5:00) 312-664-8225

800-621-8462

Fujitsu Specials

520mb Internal.....\$948
1.2Gig Int.....\$1448
2.1Gig Int.....\$2348

- MacWorlds Editors Choice
- 5 Year Warranty
- MacWorlds fastest Gig!

MAC DIRECT

Specialists in Mac Storage

Conner The Drive That Apple Uses



For 2 years Conner has been one of Apples largest hard drive suppliers!

Conner Drives

	Internal	External
C 42 MB 3.5" LPS, 2 yr warr, 150,000 MTBF	\$198	\$248
C 85 MB 3.5" LPS, 2 yr warr, 150,000 MTBF	\$228	\$288
C 120 MB 3.5" LPS, 2 yr warr, 150,000 MTBF	\$288	\$348
C 170 MB 3.5" LPS, 2 yr warr, 150,000 MTBF	\$318	\$388
C 212 MB 3.5" LPS, 2 yr warr, 150,000 MTBF	\$438	\$498
C 540 MB 3.5", 8.5 ms, 4500 RPM, 2 yr Warr,	\$988	\$1048

These new Conner drives are so reliable, that Conner has been one of Apples largest suppliers of drives. The 150,000 hours Mean Time Between Failure and the incredible speed of the 540 are just two reasons to buy a Conner.

Fujitsu Drives

	Internal	External
330 MB 3.5" 9ms, 5yr warr, 200,000 MTBF	\$848	\$898
425 MB 3.5" 9ms, 5yr warr, 200,000 MTBF, MacWorlds Editors Choice!	\$898	\$948
520 MB 3.5" 9ms, Fast SCSI, 5yr warr, 200,000 MTBF	\$948	\$998
1.1 Gig 3.5" 8.5ms, MB per sec transfer, 5yr warr, 300,000 MTBF,	\$1798	\$1898
1.2 Gig 5.25" 11.5ms, 5yr warr, (MacWorlds Fastest Gig!)	\$1448	\$1498
2.06 Gig 5.25" 11.5ms, 5yr warr, (5,400RPM & Fast SCSI)	\$2348	\$2448
2.4 Gig 5.25" 11.5ms, 5yr warr, (5,400RPM & Fast SCSI)	\$2598	\$2698

*Mean Time Between Failure is the average life expectancy of a drive.

The Fujitsu PicoBird 4 Drives 520, 425, & 330mb



Fast and Reliable!

The NuDesign 3.5" Optical MacWorlds Editors Choice



Optical Drives

NuDesign 3.5" 256mb Optical.....\$1798

NuDesign 3.5" 128mb Optical.....\$998

- MacWorlds Editors Choice!, Nov. '92
- "Fast, inexpensive, good technical support, easy to use-this is a rare combination of qualities for a storage device" (MacWorld)
- 30ms access time
- Includes cartridge

Ricoh 600mb HyperSpace..\$2898

- 28ms access time
- 1mb per sec transfer
- Read write reliable storage
- Includes cartridge
- Great for archiving, color scans, etc.

Toshiba 3.5" 1230mb & 877 mb CD ROM

Toshiba 1230mb 3.5".....\$1598.....\$1648

Toshiba 877mb 3.5".....\$1198.....\$1298

- 12.5ms Average Seek Time
- 256k cache
- SCSI-2
- Internal for CI, Mac II, Quadra

Toshiba 3301.....\$538

- Includes driver CD carrier and cables
- 325ms access time
- MacWorld and MacUsers Highest Rated!

Quantum Drives

	Internal	External
42mb 3.5"	\$208	\$278
85mb 3.5"	\$258	\$328
127mb 3.5"	\$328	\$398
170mb 3.5"	\$368	\$428
240mb 3.5"	\$588	\$658
525mb 3.5"	\$1148	\$1218

Prometheus Modems

Promodem 144i Internal 14.4 Powerbook Data/Fax with V.42/V.42bis\$298

Promodem 144e External 14.4/9600 Data/Fax with V.42/V.42bis\$298

Promodem 24e External 2400/9600 Data/Fax with V.42 & V.42bis\$149

Promodem Mini External, 2400bps mini unit\$89

SyQuest Removables

44MB Removable.....\$448.00

88MB Removable.....\$598.00

- 19ms Access time
- Both Drives include Cartridge
- 2 Year Warranty

NuDesign DAT Drives

NuDesign Dat 2.1Gig capability

With SoftBackup\$998

With Retrospect.....\$1098

NuDesign 5.0 Gig Compression Dat

With SoftBackup\$1398

With Retrospect.....\$1498

800-621-8462

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60 East Chestnut - 145, Chicago, IL 60611
Visa, Mastercard, Amex, COD, Telecheck Approved Checks, Gov., Corp., Univ., P.O.s welcome. All new drives, preformatted with latest stable system software. Factory warranty. Bracket, cables and software included. 30 Day Money back Guarantee covers drive products only. Return Authorization number required for returns. Prices, terms and availability subject to change without notice.

The NuDesign DAT



NuDesign Dat 2.1 Gig capability

With SoftBackup\$998

With Retrospect\$1098

- Up to 2.1 Gig per tape
- Our best buy ever on DAT!
- Up to 10 mb per minute backup time
- Available with a complete version of Retrospect

MAC DIRECT

Monitor Special

Sampo 20" Color\$1298

- Two Page displays
- Perfect for DTP & CAD/CAM
- Include Interface cards

Trinitron 19" Color ..\$1998

Full Page Display.....\$398



14" Sampo Color.....\$398

- Plug compatible with the IIsi, Ci, and the LC



14" SONY Trinitron.....\$698

- SONY 1304 for the Mac LC, Si, Ci and Quadra



16" SONY Trinitron..\$1098

- Plug compatible with the Quadra
- Plug compatible with the Ci, Si and LC at 640x480

SAMPO 20" Color System 1298.00



Sampo 20" 8 Bit Color System.....\$1298.00

24 Bit Color System.....\$1998.00

Mono System\$698.00

Grey Scale System.....\$998.00

- The SAMPO is a high quality dual page display without the high cost!
- Includes 1 bit, or 8 bit Video board and cable
- 2 page display supports all Mac IIs', the Si, SE-30, SE and the LC

Trinitron 19" Color System

8 Bit System\$1998.00

24 Bit System\$2598.00

- The Trinitron, 19" is a Sony OEM Trinitron, and one of our best buys! True Trinitron color at a great price!
- Includes 8 bit or 24 Bit Video board and cable
- 2 page display supports all Mac IIs', the Si, SE-30, and the LC

NuDesign Full Page Grey Scale\$398.00

- Plug compatible with Si, Ci and Quadra (16 levels of Grey).
- Available with 1 Bit interface card for all Mac IIs', SE-30, SE and LC \$488.00.



19" Trinitron System

- With 8 Bit interface\$1998
- With 24 Bit interface\$2598



NuDesign Full Page Display

- Grey Scale for Ci, Si, Quadra....\$398
- Ii, IIfx, FX, SE30, 1 Bit\$488



20" Sampo Color System

- With 8 Bit interface\$1298
- With 24 Bit interface\$1998



UMAX 600 DPI Color Scanner

Umax UC-630 With PhotoShop.....\$1098.00

Transparency/Slide Scanner Option.....\$798.00

Automatic Document Feeder\$498.00

- Rated four mice by MacUser (Dec '91) ■ Rated fastest by MacUser(Dec '91)
- "Boasts the highest vertical resolution..." " Umax produced the best images..." MacUser
- "Tamarack and Umax excel in speed and color accuracy" MacUser

UG-630 With PhotoShop Grey Scale Scanner\$898.00

Umax UC-1200S With PhotoShop\$3298.00

Transparency/Slide Scanner Option.....\$898.00

- Incredible 1200 dpi scanning res. recognizes 1 billion colors internally
- Single-pass design increases scanning speed
- Includes Adobe Photoshop

Umax 600DPI Greyscale With Typereader OCR

Software, Ofoto and Publish It,\$898.00

- An incredible OCR package with over \$1000 in software alone,

Scanner Special

Umax UC-630\$1098

With Photoshop

- Rated 4 Mice by MacUser
- Rated Fastest by MacUser
- 8 1/2 x 14 Scanning area

Umax UC-1200S....\$3298

With Photoshop

800-621-8462

**Hours: 8:30 - 8:00 CST,
Saturdays 10:00 - 4:00
Technical Service and
Order Tracking (8:30-5:00)
312-664-8225**

MAC DIRECT
Specialists in Mac Storage

60 East Chestnut - 145, Chicago, IL 60611
Visa, Mastercard, Amex, COD, Telecheck Approved Checks, Gov.,
Corp., Univ., P.O.s welcome. All new drives, preformatted with latest
stable system software. Factory warranty. Bracket, cables and
software included. 30 Day Money back Guarantee covers drive
products only. Return Authorization number required for returns.
Prices, terms and availability subject to change without notice.

Quantum



GO•Drives have 32k cache, low power consumption, MTBF of 150,000 hours, and ONE Year Warranty. ELS drives have 32k cache, low power consumption, MTBF of 250,000 hours and TWO Year Warranty. LPS drives have 64k-256k cache, MTBF of 250,000 hours, and TWO Year Warranty. PRO drives have 256k cache, MTBF of 150,000 hours, and TWO Year Warranty.

Unformatted Capacity	Model	Access Time	Actual MAC Capacity	Internal	External
GO•DRIVE (2.5" HARD DRIVES DESIGNED FOR NOTEBOOKS)					
80mb	GO80	17ms	80mb	\$325	\$425
120mb	GO120	17ms	120mb	\$455	\$555
NEW 160mb	GRS160	17ms	160mb	\$549	\$649
ELS SERIES (3.5" LOW PROFILE AND LOW POWER)					
42mb	ELS42	19ms	40mb	\$185	\$245
85mb	ELS85	17ms	82mb	\$239	\$299
127mb	ELS127	17ms	124mb	\$309	\$369
170mb	ELS170	17ms	160mb	\$345	\$405
LPS SERIES (3.5" LOW PROFILE)					
240mb	LPS240	10ms	234mb	\$519	\$579
525mb	LPS525	10ms	500mb	\$1049	\$1109
PRODRIVE SERIES (3.5" HALF HEIGHT)					
425mb	PRO425	9ms	406mb	\$899	\$959
700mb	PRO700	10ms	670mb	\$1249	\$1309
1.0GIG	PRO1050	10ms	1001mb	\$1529	\$1589
1.2GIG	PRO1225	10ms	1165mb	\$1699	\$1759

Maxtor



Unformatted Capacity	Model	Access Time	Actual MAC Capacity	Internal	External
XT SERIES (3.5" LOW PROFILE)					
120mb	7120S	15ms	121mb	\$269	\$329
207mb	7213S	15ms	202mb	\$389	\$449
LXT SERIES (3.5" HALF HEIGHT)					
330mb	LXT-340	15ms	324mb	\$639	\$699
535mb	LXT-535	12ms	510mb	\$975	\$1035
XT-8000 AND PANTHER SERIES (5.25" FULL HEIGHT)					
645mb	XT-8760S	16.5ms	639mb	\$1179	\$1279
1.2GIG	PO-12S	13ms	997mb	\$1429	\$1529
1.7GIG	P1-17S	13ms	1433mb	\$1729	\$1829

Maxtor 3.5" drives carry a ONE Year Warranty. Maxtor 5.25" drives carry a TWO Year Warranty.

FUJITSU

FIVE YEAR WARRANTY



Unformatted Capacity	Model	Description	Access Time	Actual MAC Capacity	Internal	External
425mb	M2623FA	3.5" Half Height	9ms	405mb	\$899	\$959
520mb	M2624FA	3.5" Half Height	9ms	496mb	\$989	\$1049
1.2GIG	M2266	5.25" Full Height	14.5ms	1029mb	\$1529	\$1629
2.0GIG	M2652	5.25" Full Height	14.5ms	1665mb	\$2629	\$2729

Seagate



Unformatted Capacity	Model	Description	Access Time	Actual MAC Capacity	Internal	External
3.5" DISK DRIVES						
248mb	ST3283N	Low Profile	12ms	235mb	\$599	\$659
1.2GIG	ST11200N	Half Height	10.5ms	1000mb	\$1619	\$1679
WREN AND ELITE SERIES (5.25" FULL HEIGHT)						
645mb	ST4767N	Wren Runner II	11.9ms	634mb	\$1519	\$1619
1.2GIG	ST41200N	Wren-7	15ms	989mb	\$1399	\$1499
1.6GIG	ST41651N	Wren-8	15ms	1350mb	\$1909	\$2009
2.1GIG	ST42100N	Wren-9	12.9ms	1900mb	\$2099	\$2199
1.6GIG	ST41600N	Elite-1	11.5ms	1307mb	\$2029	\$2129
2.4GIG	ST42400N	Elite-2	11ms	2050mb	\$2919	\$3019
3.4GIG	ST43400N	Elite-3	11ms	2750mb	\$4049	\$4109

Seagate drives carry a ONE Year Warranty.

HEWLETT PACKARD

FIVE YEAR WARRANTY



Unformatted Capacity	Model	Access Time	Actual Mac Capacity	Internal	External
3.5" HALF HEIGHT DRIVES					
234mb	C2233	12.6ms	223mb	\$799	\$859
422mb	C2235	12.6ms	402mb	\$1049	\$1109
1.2GIG	C2247	10.5ms	1000mb	\$2029	\$2089
5.25" FULL HEIGHT DRIVES					
677mb	97556	13.5ms	633mb	\$1465	\$1565
1.2GIG	97558	13.5ms	1020mb	\$1749	\$1849
1.6GIG	97560	13.5ms	1292mb	\$2099	\$2199
2.4GIG	CP3010	11.5ms	2000mb	\$3099	\$3109



ClubMac 88c will allow you to read and write both 44mb and 88mb cartridges. Finally, there's one simple solution. Buy the drive that will offer complete compatibility with all SyQuest based cartridges. Buy the ClubMac 88c.



ClubMac SyQuest Dual Drives offer users the most convenient way to exchange data between cartridges.



Internal SyQuest Technology, essential for every Quadra 900/950, Ilvix, Ilvix and Performa 600 user, is available from ClubMac TODAY!

CLUBMAC 88c REMOVABLES*

ClubMac 88c External (SQ5110C)	\$619
ClubMac 88c Internal	\$599
ClubMac 88c Dual	\$1149

* ClubMac 88c will read and write 44mb cartridges, but will not format 44mb cartridges.

CLUBMAC 44MB REMOVABLES

ClubMac 44mb External (SQ555)	\$389
ClubMac 44mb Internal	\$369
ClubMac 44mb Dual	\$729

CLUBMAC 88MB REMOVABLES

ClubMac 88mb External (SQ5110)	\$489
ClubMac 88mb Internal	\$469
ClubMac 88mb Dual	\$899

SYQUEST CARTRIDGES

	QTY 1	QTY 10
44mb Cartridge	\$64	\$62
88mb Cartridge	\$99	\$96

NEW
SyQuest 88c

FEATURING



SyQuest®
REMOVABLE
TECHNOLOGY

SyQuest Drives include

- TWO Year Warranty
- One cartridge and necessary cables
- SCSI Director™ Formatting Utility

SyQuest Cartridges carry a ONE Year Warranty.

CONNER

Unformatted Capacity	Model	Description	Access Time	Actual MAC Capacity	Internal	External
85mb	CP30080E	3.5" Low Profile	17ms	82mb	\$225	\$285
120mb	CP30100	3.5" Low Profile	19ms	116mb	\$285	\$345
170mb	CP30170E	3.5" Low Profile	15ms	160mb	\$325	\$385
212mb	CP30200	3.5" Low Profile	12ms	206mb	\$425	\$485
540mb	CP3540	3.5" Half Height	8.5ms	515mb	\$995	\$1055

Conner drives carry a ONE Year Warranty.

MICROPOLIS

Unformatted Capacity	Model	Description	Access Time	Internal	External
1.0GIG	2112	3.5" Half Height/Fast SCSI-2	10ms	\$1699	\$1759
2.0GIG	1924	5.25" Full Height/Fast SCSI-2	11.5ms	\$2849	\$2949

ClubMac OPTICAL Drives



Model	Capacity	Description	Seek	External
CMO-OD3000 Teac	128mb	3.5" Half Height	45ms	\$1049
CMO-LF3004 Panasonic	128mb	3.5" Half Height	45ms	\$1129
CMO-3100E Ricoh	128mb	3.5" Half Height	45ms	\$1089
CMO-5031E Ricoh	594/652mb	5.25" Full Height	28ms	\$2399
Tahiti II MaxOptix	650mb/1.0GIG	5.25" Full Height	35ms	\$3269
128mb Cartridge	3.5" Single Sided			\$39
594/652mb Cartridge	5.25"-512/1024 bytes/sec			\$99

All ClubMac Opticals include ONE cartridge and ONE Year Warranty.

**GREAT
Media
PRICES**

60 meter DAT	\$13
90 meter DAT	\$16
CT600N	\$19
CT600F	\$28
Exabyte 8mm	\$18

ClubMac TAPE BACKUP Systems



Capacity	Model	Description	Media	Internal	External
155mb	Teac MT2ST/N50	Analog	CT600N	\$469	\$489
600mb	Teac MT2ST/F50	Analog	CT600F	\$679	\$699
2.0GIG	ARDat	DAT, DDS	4mm	\$1219	\$1239
2.0GIG	WangDAT 1300XL	DAT, DDS	4mm	\$1249	\$1269
3-5GIG	WangDAT 3200	DAT, DDS-DC	4mm		\$1489
2.0GIG	HP 35470A	DAT, DDS	4mm	\$1329	\$1349
3-5GIG	HP 35480A	DAT, DDS-DC	4mm	\$1529	\$1549
2.2GIG	Exabyte EXB-8200	Digital/Helical	8mm		\$1859
5.0GIG	Exabyte EXB-8500	Digital/Helical	8mm		\$2849

Tape BackUp Systems include RetroSpect v.1.3c Backup Software, ONE cartridge and ONE Year Warranty.

ClubMac

1-800-258-2622

3 Musick • Irvine, CA 92718

Sales, Info, Int'l (714)768-8130

Tech Support (714)768-1490

24-Hour Fax (714)768-9354

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1-800-CLUBMAC

1-800-258-2622



DAYSTAR

D I G I T A L



33 MHz TURBO 040 **\$1429**
FASTCACHE TURBO 33 -128K ADAPTER **\$359**
CHARGER **\$859**

POWERCACHE

(Classic, SE, LC, SE/30, II, IIfx, IIfx, IIfx, IIfx, Performa)
 w/o FPU w/ FPU

33 MHz PowerCache* **\$389** **\$479**
 40 MHz PowerCache* **\$559** **\$649**
 50 MHz PowerCache* **\$729** **\$859**
 Equalizer LC **\$169** **\$239**
 PowerCache Adapter **\$40**

* Cache Adapter not included

MACINTOSH MEMORY...

QUADRA 950

16mb Module **\$565**
 256K VRAM **\$25**
VIDEO (Q700/900)
 256K VRAM **\$25**

MODEMS...



SUPRAFAXMODEM **\$349**
 14.4 S/R fax, 14.4 data modem v.32bis, v.42bis, MNP 5
 w/FaxSTF & Microphone Software

US Robotics®

Sportster 14.4 Mac & Fax **\$349**
 Sportster 2400 Mac & Fax **\$189**
 Worldport Pocket 14.4 for Mac **\$415**
 Courier HST Dual Standard **\$Call**

CACHE CARDS

FastCache IIsi **\$279**
 FastCache IIsi with 68882 **\$349**
 FastCache IIsi **\$215**
 FastCache 040 (128K - Q700/900) **\$259**
 FastCache 040 (128K - Q700/900/950) **\$399**

EXPANSION BOARDS

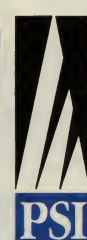
DualPort IIsi **\$165**
 PowerMath LC **\$115**

MAC MEMORY

1mb X 8 - 80ns **\$33**
 2mb x 8 - 80ns **\$64**
 4mb X 8 - 80ns **\$125**
 16mb X 8 - 80ns **\$Call**
MAC IIFX
 1mb X 8 - 80ns **\$35**
 4mb X 8 - 80ns **\$130**
 16mb X 8 - 80ns **\$Call**

POWERBOOK 140/170

4MB Memory Module **\$165**
 6MB Memory Module **\$205**
POWERBOOK 160/180
 8MB Memory Module **\$335**
 10MB Memory Module **\$415**
DUO 210/230
 4MB Memory Module **\$Call**
 8MB Memory Module **\$Call**



PowerModem I **\$135**
 (24/96/48 S/R fax modem)
 PowerModem II **\$225**
 (24/96/96 S/R fax modem)
 PowerModem III **\$325**
 (96/96 S/R fax modem)
 PowerModem IV **\$415**
 (14.4/14.4 S/R fax modem)

GLOBAL VILLAGE POWERPORT

Bronze (24/96 S/R fax modem) **\$189**
 Silver (96/96 S/R fax modem) **\$365**
 Gold (14,400 S/R fax modem) **\$419**

TELEPORT

Bronze (24/96 S/R fax modem) **\$189**
 Silver (96/96 S/R fax modem) **\$359**
 Gold (14,400 S/R fax modem) **\$419**

ASANTÉ

Mac II (NuBus)
 Thick/Thin/10BaseT, 64K **\$199**
 Thick/Thin, 64K **\$149**
 Thick/10BaseT, 64K **\$149**
Mac IIsi & SE/30 (030 PDS)
 Thick/Thin/10BaseT, 64K, FPU socket **\$199**
 Thick/Thin/10BaseT, 64K, FPU chip **\$289**
 Thick/Thin, 64K, FPU socket **\$149**
 Thick/Thin, 64K, FPU Chip **\$245**
 Thick/10BaseT, 64K, FPU socket **\$149**
 Thick/10BaseT, 64K, FPU Chip **\$245**
Mac LC & LCII (020 & 030 PDS)
 Thin/10BaseT, FPU Socket **\$199**
 Thin/10BaseT, FPU Chip **\$289**
 Thin, FPU Socket **\$149**
 Thin, FPU Chip **\$245**
 10BaseT, FPU Socket **\$149**
 10BaseT, FPU Chip **\$245**

Mac SE (68000 PDS)
 Thick/Thin/10BaseT, 32K **\$199**
 Thick/Thin, 32K **\$149**
 Thick/10BaseT, 32K **\$149**
SCSI Products
 Thick/Thin/10BaseT, Includes SCSI cable **\$299**
 Powerbook, Thick/Thin/10BaseT **\$329**
 10BaseT, Includes SCSI Cable **\$239**
 PowerBook, 10BaseT **\$269**
FriendlyNet Adapters
 Thin FriendlyNet Media Adapter **\$79**
 Thick FriendlyNet Media Adapter **\$79**
 10BaseT FriendlyNet Media Adapter **\$79**
10BaseT Hubs
 10BaseT Hub w/12 10T, Thick & Thin ports **\$479**
 10BaseT Hub w/8 10T, Thin ports **\$245**
 12-port Smart Hub **\$779**
 12-port Smart Hub w/SNMP Hardware Module **\$899**
 SNMP Card Agent for Mac (12-Pack) **\$120**
 AsantéView software only / Mac 2.0 Out of Bound **\$245**
Bridging
 AsantéPrint, Thick/Thin or Thick/10BaseT **\$319**

MEGA®

BERNOULLI

Transportable 90 **\$485**
 Transportable 150 **\$759**

CARTRIDGES

Tri-pack 90mb **\$395**
 Tri-pack 150mb **\$379**



Omega Bernoulli Transportables include one cartridge, necessary cables, and 5 YEAR Warranty. Omega cartridges include 5 YEAR Warranty.

radius

RADIUS COLOR DISPLAYS

Color Display/21 **\$2979**
 PrecisionColor Pivot **\$949**
 PrecisionColor Display/19 **\$2089**
 PrecisionColor Display/20 **\$2319**
 PrecisionColor Display/20S **\$2349**

RADIUS MONO/GS DISPLAYS

Full Page Display* **\$569**
 Mono Pivot Display /E* **\$699**
 Two Page Display/19 **\$899**
 Two Page Display/21 **\$1149**
 Two Page Display/21E* **\$1299**

* Low Emissions

RADIUS INTERFACES

Color Pivot **\$505**
 PowerView **\$499**
 PrecisionColor 8XJ **\$489**
 PrecisionColor 24X **\$1629**
 PrecisionColor 24XK **\$819**
 PrecisionColor 24XP **\$489**
 Two Page Display **\$395**
 Mono Pivot **\$249**
 Full Page Display **\$189**

ACCELERATORS / MULTIMEDIA

Radius Rocket 25i **\$1199**
 Radius Rocket 33 **\$1939**
 RocketShare **\$419**
 SCSI-2 Booster **\$249**
 VideoVision (Basis System) **\$1625**
 VideoVision (Presentation) **\$1949**



VIDEOVISION (BASIC SYSTEM) \$1625

VIDEOVISION (PRESENTATION) \$1949

Everything you need to create hot desktop video presentations. Mix and record high-quality video, audio, and Macintosh graphics to videotape. VideoVision integrates QuickTime and other multimedia applications by providing computer graphics display, video input, and video output on a single card.



ROCKET 25i \$1199
ROCKET 33 \$1939

Radius Rockets can increase the processing speed of the Mac II up to 8 times, allowing the Mac II to exceed Quadra performance



INCLUDES ADOBE PREMIERE 2.0 (LIMITED TIME OFFER)

RASTEROPS CORPORATION

MOVIEPAK \$1499

MoviePak is the real-time JPEG compression-decompression daughterboard for full-motion video digitizing and full-screen QuickTime playback along with full-featured video editing software.



VIDEO/MULTIMEDIA/ACCELERATORS

24XLTV **\$2639**
 MediaTime **\$1519**
 24STV **\$759**
 VideoTime **\$1135**
 24MxTV **\$1639**
 PhotoPro NuBus **\$775**

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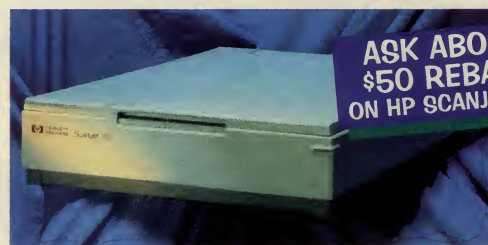
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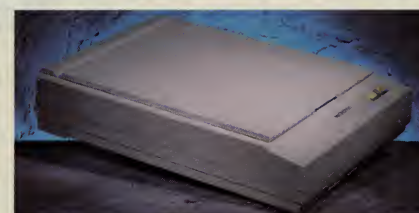
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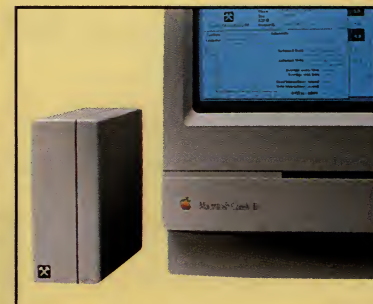
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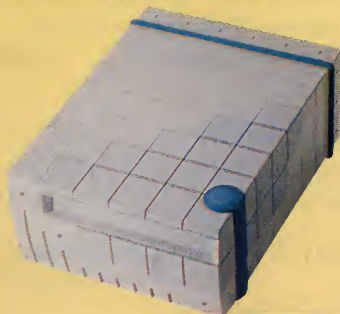
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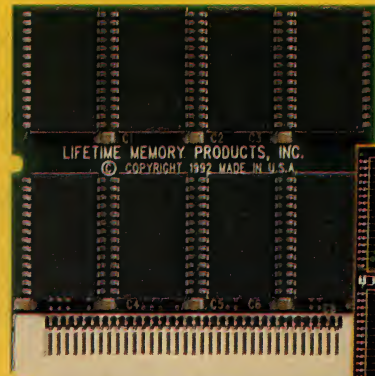


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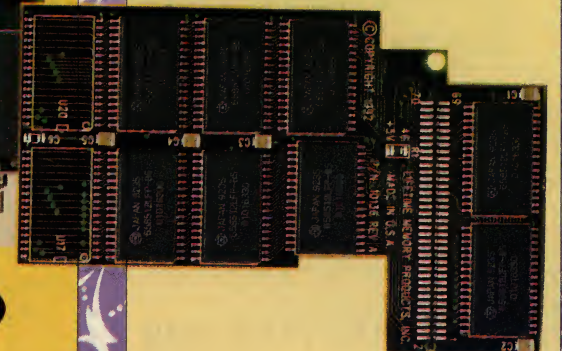
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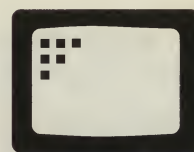
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General
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Networking
Peripherals
Used Equipment

104 Software

Bar Coding
Business Management
Desktop Publishing
Education
Finance
General
Graphics
Multimedia
Networking

104 Special Services

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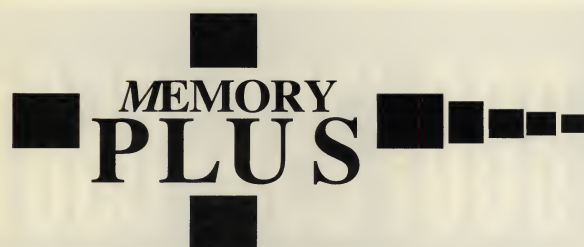
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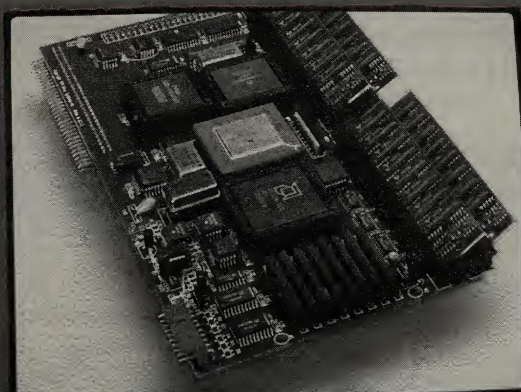
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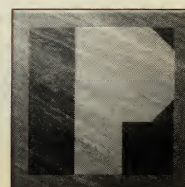
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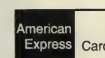
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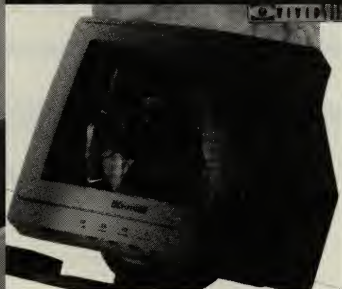
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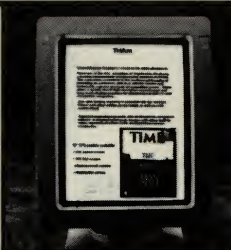
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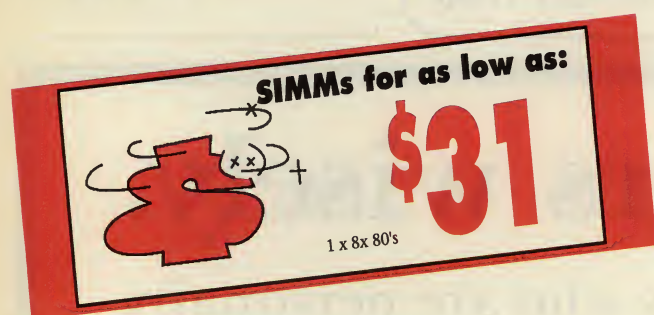
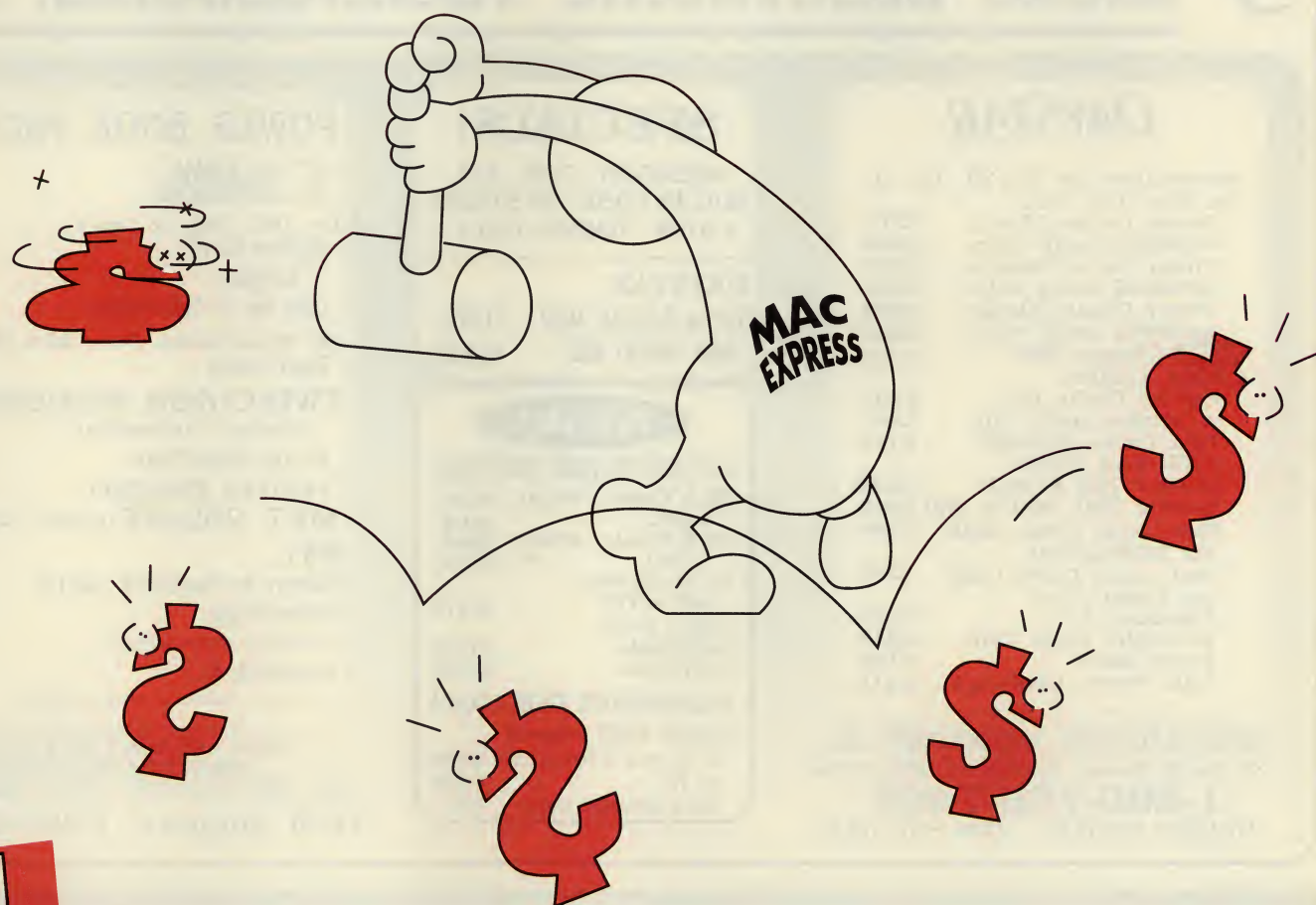
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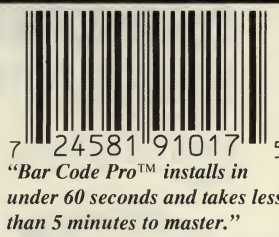
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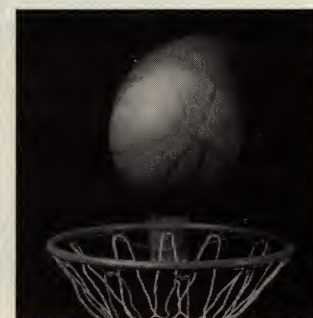
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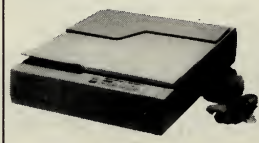
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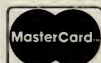
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Model	Unformatted Capacity	Seek	Internal Xfer	Internal	External	Model	Unformatted Capacity	Seek	Internal Xfer	Internal	External
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1003	1.2GB	3.5"	10.5ms	24-42Mbit	\$ 1,999 \$ 2,079	127	127MB	1"Hi 17ms	8-12Mbit	\$ 329 \$ 399	
1025	1.2GB	FH	13.5ms	23Mbit	\$ 1,679 \$ 1,799	170	170MB	1"Hi 17ms	8-12Mbit	\$ 399 \$ 479	
1290	1.6GB	FH	13.5ms	23Mbit	\$ 2,279 \$ 2,399	240	240MB	1"Hi 16ms	15-30Mbit	\$ 529 \$ 599	
1650	2.1GB	FH	11.5ms	24-42Mbit	\$ 2,679 \$ 2,799	502	525MB	1"Hi 10ms	18-38Mbit	\$ 1,129 \$ 1,199	
1910	2.4GB	FH	11.5ms	24-42Mbit	\$ 3,079 \$ 3,199	1200	1225MB	3.5" 10ms	18-38Mbit	\$ 1,729 \$ 1,799	

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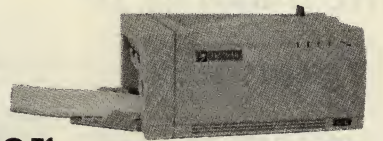
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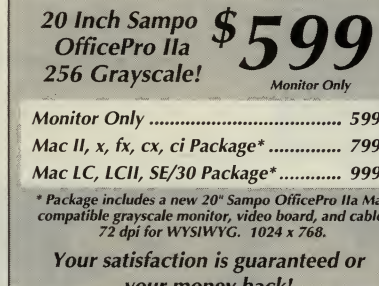


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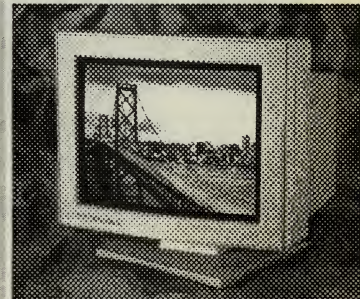


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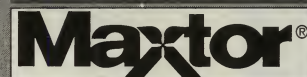
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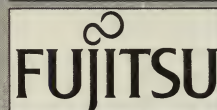
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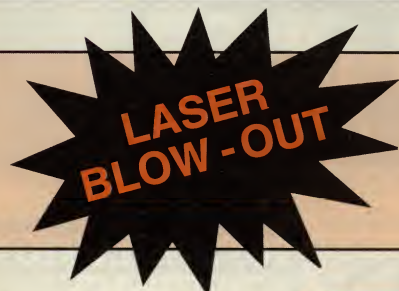
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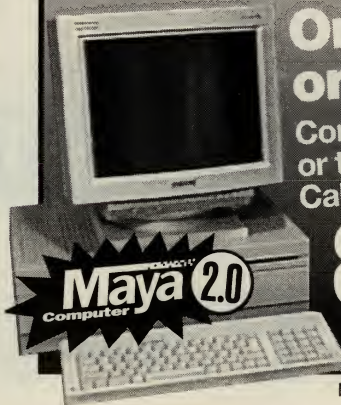
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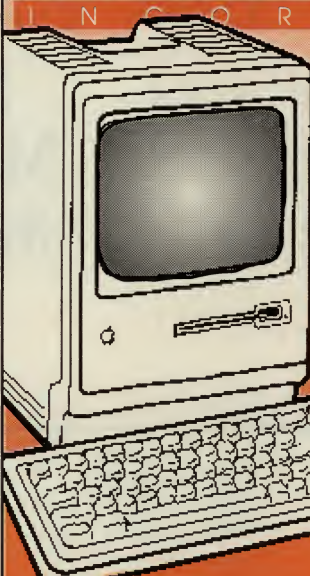
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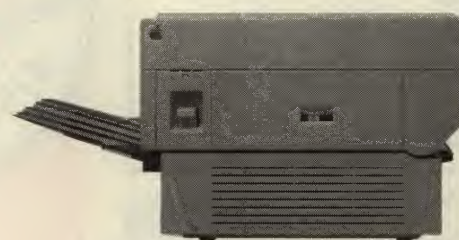
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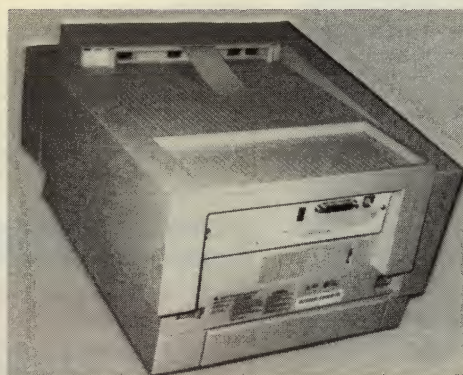
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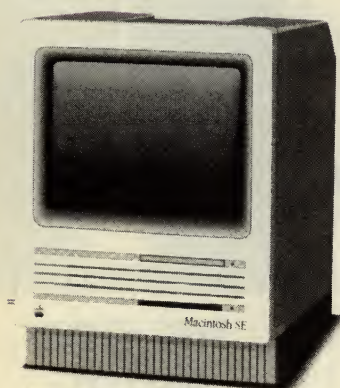
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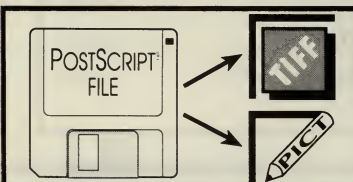
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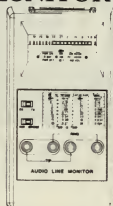


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WorldScript

From Page 1

record player with no needle," said Bill Griswold, Mac coordinator for the Summer Institute of Linguistics in Waxhaw, N.C. "I have a CD full of language modules, but I can't distribute them without going to jail."

Some corporate users said they have been looking forward to WorldScript because it will let them write in multiple languages within the same document, including vertical and right-to-left scripts and languages with two-byte character sets.

Rhône-Poulenc Ag Co., a chemical company in Research Triangle Park, N.C., has been using a beta version of WorldScript to produce warning labels in a variety of languages. Eliza-

beth Kahn, international communications coordinator for the company, said she used to write in foreign languages by switching among localized Hebrew, Arabic, Korean and Thai Mac systems on her hard disk. "It was very cumbersome and I crashed a lot. My hard drives were full of System [folders]," she said. "Now, with WorldScript, I can be typing along in English and just click on a menu to work in Hebrew or Arabic."

Ker Gibbs, Apple product manager for the Japanese module, said WorldScript will help Apple sell Macs to multinational corporations. "If you're buying computers for a global company, you'll want them to work in every country that you work in. WorldScript gives you that capability, so it

makes your buying decision easy."

Nisus' Riblet said: "International businesses want to communicate with offices all over the world. The prospect of the desktop Mac as a worldwide communication instrument is very enticing."

WorldScript also promises to make upgrading system software easier for Apple. Previous versions of the system had to be localized in more than 30 languages. Individual versions had to be tailored with the alphabets and linguistic files that specify text direction, input methods and other language characteristics.

WorldScript will let Apple release and upgrade future systems all at once because the software will no longer be tied to individual languages. □

PinPoint to help mobile users get on-line with TransModem

Location system also to track whereabouts

By Mitch Ratcliffe

Richardson, Texas — Hitting the road with your PowerBook often means giving up access to on-line services as you rush from one meeting to another. But PinPoint Communications Inc.'s new TransModem will let PowerBooks and other computers log onto a fast data network and the larger telephone network from inside a car.

Due in 1994, the \$300 TransModem will combine a radio transceiver and modem to support communications software compatible with the Hayes AT-command set. The device will provide a connection to PinPoint's Array mobile radio network, which can support 38.4-Kbps data-transmission rates. PinPoint said it will charge a half cent for each 22-character block of data transmitted.

TransModems will be installed in a vehicle, attached to the car's power system. PowerBook users will be able to connect their computer via a serial cable and dial

out to an on-line service or electronic-mail system. Gateways to third-party networks, such as the MCI Mail system, also will be supported for an additional cost to the user.

PinPoint said it will focus on providing connectivity to corporations that need to build vertical applications.

The Array network is particularly suited to fleet management and mobile point-of-sale terminal applications because TransModem users can be tracked as they move. A networkwide radio-location system can identify the approximate position of each user by calculating the signal modulation in their transmissions.

PinPoint will charge \$10 a month for 2,000 position fixes.

The company will demonstrate an Array-enabled pen-based terminal running a traffic-information, roadside emergency communications and messaging application at PenExpo in San Francisco this week.

PinPoint Communications Inc. is at 2435 N. Central Expressway, Suite 850, L.B. 27, Richardson, Texas 75080. Phone (214) 705-2400; fax (214) 705-2424. □

Shiva

From Page 1

But Schwinn said Cayman went too far in predicting FastPath's demise. "It simply isn't true. The FastPath was never for sale [to another manufacturer]. We've got a very aggressive new support plan, we've just released a FastPath upgrade in

December, and we're hard at work on a major upgrade for May," he said.

Schwinn said Shiva will not pursue legal recourse, but he will respond with a letter to Cayman detailing his objections to the ad's "disinformation."

Both companies are based here.

Ted Stabler, Cayman president,

remained steadfast in his conviction that FastPath owners should make a switch. "We've done a tremendous amount of trade-ins — so far at least 100 FastPath sites — and it's not a new thing," Stabler said, adding that at least 100 FastPath sites have taken Cayman up on its offer.

"Shiva's got commitment, but it's not to routers, it's to remote access," he said. "They should be clear about saying that."

Stabler said the FastPath has not received a major upgrade since the summer of 1991, when FastPath 5 was introduced, while Cayman this month introduced the Ethernet-only GatorBox EX.

A network manager at an aerospace company with more than 400 FastPaths and a large number of Cayman products said he's not particularly surprised by FastPath's possible demise.

"The FastPath is a stable platform, but it's true it hasn't changed in a long, long time," he said. "I think everyone, including Shiva, knows that LocalTalk is going away. So whether I replace my FastPaths with an intelligent hub or a workgroup router, it's going to have to be an Ethernet product anyway." □

Shiva to support local, remote workgroups

Both Shiva Corp. and rival Cayman Systems Inc. plan to expand support for local and remote workgroups with a variety of product upgrades in 1993.

Shiva's plans include:

► Remote workgroup services.

In addition to the recently added Novell Inc. IPX (Internetwork Packet Exchange) protocol, Shiva will add Microsoft Corp.'s Windows for Workgroups (WfW) users to the LanRover roster.

A future incarnation of the LanRover, as yet unnamed, will support a version of AppleTalk Remote Access that lets mobile devices dial in using the Cellular

Digital Packet Data scheme.

Different flavors of the LanRover also will support connections to digital phone services, such as switched 56 and ISDN (Integrated Services Digital Network).

► **FastPath upgrades.** Shiva plans to include zone and device filtering, Unix-based configuration tools, and IP tunneling in a software upgrade due in May.

Cayman, although playing its product plans closer to the vest, said it will concentrate on workgroup enhancements, including gateways for AppleTalk-to-IPX and AppleTalk-to-WfW.

— By April Streeter

General Magic

From Page 1

cator that does not have a third-party operating system. Sources said Motorola plans to build a cellular and paging-based handheld communicator that runs MagicMail as its interface.

Matsushita, a leading Japanese consumer-electronics company, also plans to use MagicMail and Telescript in an upcoming device, sources said.

General Magic is the brainchild of three former Apple executives, Marc Porat, Bill Atkinson and Andy Hertzfeld, who reportedly left the company after their project was nixed in favor of Newton, Apple's forthcoming line of personal digital assistants.

Apple was an early investor in General Magic, but the relationship between the two companies has grown stormy in the past year, sources said. Apple reportedly had nonexclusive rights to use Telescript to bolster Newton's messaging capabilities, though the company has denied it will do so. Those rights are rumored to be the subject of renegotiation.

Both General Magic and Apple will be entering an increasingly crowded market for handheld communicators: A variety of devices and communications protocols are due out by 1994.

Telescript, however, reportedly will resolve conflicts between communications schemes, which could otherwise prevent the exchange of

messages between devices from different vendors. The General Magic protocol reportedly can send data encapsulated in executable instruction, which would, for instance, allow a fax to travel over a data network and print out on a laser printer. Telescript is also said to include a sophisticated directory-services scheme.

"Standards need to be set for the consumer messaging market," said Richard Shaffer, principal at Technology Partners, a New York technology investment consulting company. "By definition, one company can't set standards. So the goal is to come up with a technology and get everyone to agree to it. General Magic needs to get a lot of people on stage with their arms around one another." □

Canon may compete under own name with 600-dpi CanOPE printer family

RISC-based line will use EX engine

By Matthew Rothenberg

Lake Success, N.Y. — A new family of printers from Canon U.S.A. Inc. may give Apple's LaserWriter Pro and Hewlett-Packard Co.'s LaserJet 4 lines a run for their money, some industry sources said.

According to a press release from Weitek Corp. of Sunnyvale, Calif., Canon has selected its new XL-8220 RISC processor for its LBP-8 Mark IV, the first model in the Canon Open Printing Environment, or CanOPE, family.

The new printer reportedly will be the first Canon model based on the company's own EX engine, the 600-dpi, letter-size engine used in HP's LaserJet 4 and Mac-compatible LaserJet 4M, as well as Apple's new LaserWriter Pro 630 and 600 printers. It reportedly will support Adobe PostScript, PCL

and Canon's CaPSL page-description language.

Sources said Canon U.S.A. initially will distribute the printer under its own label in Canada and Europe.

Apple refused to comment on whether its agreements with Canon would prevent Canon from distributing a LocalTalk version of the RISC-based printer in the United States. HP said that it does not license PCL to competing vendors, including Canon, but that its agreements with Canon would not prevent the printer maker from releasing its own model with PCL emulation.

According to sources, Apple itself is preparing to break its precedent of using Canon engines in its laser printers when it unveils two 300-dpi devices based on a 5-page-per-minute engine from Fuji Xerox Co. Ltd. of Tokyo. The LaserWriter Select 300 and 310 reportedly will make their debut at next month's Macworld Expo in Tokyo (see MacWEEK, Jan. 11). □

Express Modem

From Page 1

edged that the communications cards are not readily available. "[Just] because we have officially shipped it does not mean you can find it," he said, noting that the distribution process takes time and that limited supplies have to be divided among retail, education, value-added reseller and developer channels.

An informal MacWEEK survey of dealers on both East and West coasts turned up none who had the modem in stock last week. Rothschild said the backlog probably won't be eliminated until the end of March.

He blamed the delay in part on "miscommunication" between Apple and a contractor responsible for assembling all the components of the Express Modem package. Other sources said the mix-up specifically involved the product manual.

The version of the Express Modem for the PowerBook 160 and 180, originally scheduled to ship in limited quantities this month, has not been released. But the issue is less pressing for users of the "all-in-one" models because they can choose from among a variety of third-party internal modem offerings originally designed for the PowerBook 140, 145 and 170.

The Duos, on the other hand, use a new design incompatible with previous modems. Duo owners who need to communicate have been forced to make do with external modems, which add more weight and bulk in travelers' briefcases and in most cases require AC power to operate.

"In general, [users] are being patient. They understand the problem," said Ken Krich, president of ComputerWare, a Palo Alto, Calif., reseller. "Most are buying third-party [external] devices."

Apple's tardiness in delivering the Duo modem might have created a window of opportunity for third-party modem manufacturers, but it's one they have found hard to open.

U.S. users also can't find Duo MiniDocks in stock

Although Apple's Express Modem is taking its time getting out the door, another Duo peripheral that Apple claims has been shipping for months is nowhere to be found: the Duo MiniDock.

The \$589 dock, which adds video-out and standard Mac ports, was announced last October along with the Duos.

"We have this theory that [Apple] is handcrafting them and the guy who does the transistors is out," said Michael Burt, assistant manager for retail sales at the Computer Attic Corp. store in Redwood City, Calif.

Apple said the MiniDock has been shipping since last November but not in quantity in the United States. "The first two months' worth went to Europe first," said Dave Rothschild, PowerBook product-line manager at Apple. "Some made it to the U.S. in December. Now it is starting to be available here in larger volumes."

"We sat down with a number of companies that have expressed interest in developing a Duo modem," Apple's Rothschild said. "But [we] don't have any current plans to distribute a hardware guide, [other than] on a case-by-case basis."

Steve Cherry of PSI Integration Inc. of Campbell, Calif., said, "Apple is making it real difficult to get the specs." He said third-party developers would have a hard time making a profit on a Duo modem because of Apple's aggressive pricing and because of the difficulty involved in adding a modem in Duos.

Installing a modem requires a trained technician using special tools to disassemble almost the entire computer. Users would have to spend about \$100 in service costs to have one installed.

For this reason, Apple is likely to offer a

configuration of the Duo with the modem preinstalled at the factory, once the backlog is eliminated. "We have not announced any Duo modem configurations," Rothschild said, "but clearly that's something customers are going to want, and it's our business to give our customers what they want."

Barbara Wilkinson-Witt, computer manager at Whole Earth Access in Berkeley, Calif., said, "Most users don't even go for the Duo Dock — instead, they opt for more RAM, adapter cables and Apple's floppy adapter."

Burt said: "We have 40 [MiniDocks] on order, but nobody has bought one yet. There doesn't seem to be interest in it like the [Duo Dock]."

"There are lots of third-party docks out there that are much better than the Apple MiniDock," Burt said. "It doesn't look like [the MiniDock] is going to be a market buster." — *By Raines Cohen*

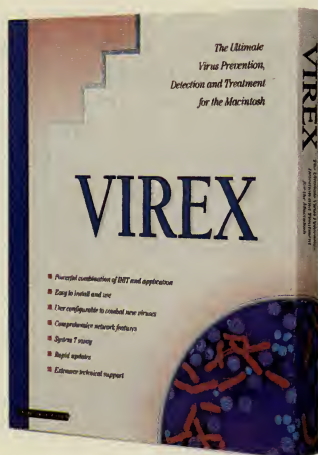
This would make it even harder for a third-party offering to succeed.

At least one third-party modem manufacturer reported more success in its Duo modem development efforts. "We had to work very, very hard to get those specs," said Rick Greene, vice president of Twincom USA in Wilmington, N.C. "But we got them, and based on the last conversation I had with my engineers, we may have a modem for the Duo in 60 to 90 days." □

Advertiser index

Amtex Software	54
APS	65-67
APT Communications	55
Artifice	55
Asanté	19
Boxlight	55
Cayman Systems	112
Club Mac	80-83
Cypress Research	54
Datawatch (Microcom)	108
Dayna Communications	21
DayStar	2
Deneba Systems	5
Digital Eclipse Software	54
Digital Equipment	31
Educational Resources	55
Educorp	105
Farallon	23
Focus	35
GDT Softworks	55
Graphsoft	48
Hardware That Fits	72-73
Hatnet	54
Impace Systems	24
Insignia Solutions	15
International Mac Specialists	100
La Cie	59-64
Lotus	33
Mac & More	56-57
Mac & PC	70-71
Mac Center	75
Mac Outlet	86
MacDirect	77-79
MacExpress	93
Macromedia	26-27
MacSale International	101
Mainstay	32
Memory Direct	91
Memory Plus	89
MicroMac Technology	92
MicroNet	37
NEC Technologies	10-11
ON Technology	110
Pacer Software	12
Peripheral Outlet	90
Prime Option	55
Radius	16-17
RasterOps	111
Relax Technology	98-99
Seiko	40
Seybold	51
Shreve Systems	103
Sigma Designs	7
Soft Arc	13
Spin Peripherals	76
SuperMac	29
Syex	68-69
Symantec	47
Synergy Software	54
Technology Works	87
Tektronix	25
The Cobb Group	58
The LLB Company	84-85
Third Wave Computing	74
Xante	54

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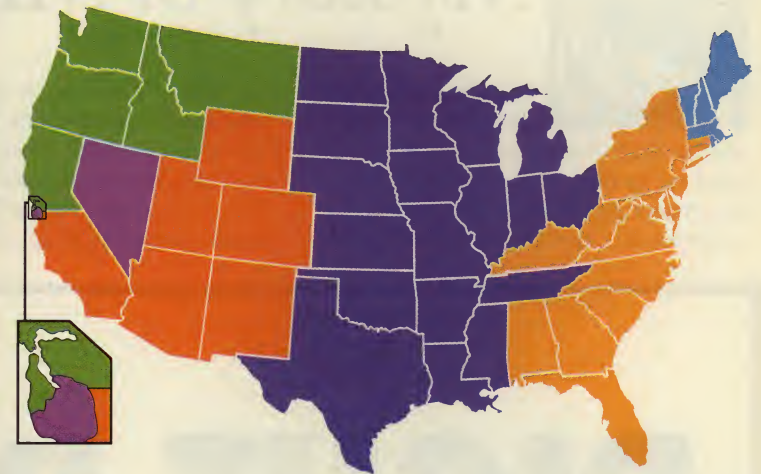
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Forminco Mouse Arena	9	FTG PenDirect, Deluxe PenDirect, PenDirectPro for Mac	12	Apple OneScanner	3
ACCOUNTING		INTEGRATED PACKAGES		La Cie SilverScanner II bundles, automatic document feeder, transparency option	28
CheckMark MultiLedger 3.0, Payroll 5.0	13	Microsoft Works 3.0	34	Nikon CoolScan	28
Teleware M.Y.O.B.	9	MONITORS & DISPLAY CARDS		SCIENTIFIC TOOLS	
COMPUTER-AIDED DESIGN & 3-D MODELING		Polaroid Professional Presenter DP-2000, optional video adapter	30	MacSciTech SciTech Journal	36
Alias Research UpFront for the Mac, Sketch!	49	MULTIMEDIA		SOUND & MUSIC	
Amiable FlexiCAD	49	DiVA Analog Tool Kit, Digital Delivery Kit, Sparrow, VideoClip CD-ROMs, VideoShop 2.0	28	Digital Eclipse On the Air, Zounds	9
Artifice Design Workshop	49	Sega Activator	32	STORAGE	
Ashlar Vellum 3D	49	NETWORKS		APS 500-Mbyte, 1.2-Gbyte, 2.4-Gbyte hard drives	12
Asym ZOOM	49	ACI US 4D Server	30	JVC Personal Archiver for Macintosh CD-ROM production system, Personal RomMaker	12
Autodesk AutoCAD Release 11, Advanced Modeling Extension, Generic CADD	49	Cabletron 16-, 32-port Communications Server Interface Modules	20	Microtech Nova XL2700 2.8-Gbyte drive, Roadrunner (formerly Athena) & Nova drive bundles	8
auto*des*sys form*Z	49	Cayman GatorBox EX, GatorStar	1	Storage Dimensions Fast SCSI, MacinStor Tape 400, Wide SCSI, MacinStor SpeedArray Fast drives	6
Cirad AMAP	30	Cisco Cisco 7000 router & network interface cards, AGS+ router	18	SYSTEM ENHANCEMENTS	
Clarix Clarix CAD	49	Dayna DOS Mounter Plus, NetMounter	6	Apple Duo Dock, Duo Floppy Adapter	45
Computervision VersaCAD Macintosh, VersaCAD Macintosh Drafter	49	ImageNet ImageGate 56 Gateway	20	Apple Duo MiniDock	45, 108
DesignCAD DesignCAD 2D/3D	49	LeeMah TraqNet, InfoKey/InfoCard security software	39	MicroMac 32-MHz MultiSpeed 68030 accelerator card for Mac Plus & SE	9
Dynaware DynaPerspective	49	Northpoint CompassPoint Server	30	Second Wave Expanse NB4 and NB8	4
Engineered Software PowerDraw	49	Novell LANalyzer for Windows, LANalyzer for NetWare	20	TELECOMMUNICATIONS	
GeoCAD GeoCAD	49	Proteus Quota 3.0	20	Apple Duo Express Modem	1
Graphisoft MiniCad+, BluePrint	49	Radiant PowerSwitch LT	4	General Magic MagicMail, Telescript	1
Innovative Data Designs Dreams	49	Sassafras KeyServer	20	Hayes Optima 144 LAN Modem package, HayesConnect 3.1, Smartmodem Optima 14400 modem, Smartcom II	20
Intergraph MicroStation Mac	49	Shiva FastPath 5, FastPath upgrade	1	PinPoint TransModem	107
Macromedia ModelShop II, Swivel 3D Professional, MacroModel, MacroMind Three-D	49	usrEZ netSecure	18	ResNova NovaLink Professional 3.0, NovaTerm 3.0	18
Pixar Showplace-MacRenderMan, CD-ROM	49	ORGANIZATIONAL TOOLS		Unlimited Model 305 acoustic coupler with built-in fax modem	20
Softdesk AutoArchitect Release 10	49	ExecUtron P.I.M.S. 10.0.4 inventory & sales management system, P.I.M.S. Connect	8	WordStar Under Cover fax cover sheet collection	9
Specular International Infini-D	49	Kaetron TopDown Viewer, Flowcharter, Flowchart Express	6	UTILITIES	
Strata StrataVision 3d	49	MacVONK TeamAgenda	6	Affinity Tempo II Plus 3.0	6
Unic Architrion II	49	POWERBOOK UTILITIES & ACCESSORIES		CE QuickKeys Test Drive	36
View by View Turbo 3D	30	Apple Apple Remote Access	52	Central Point MacTools	41
Virtus Virtus WalkThrough	49	Apple Express Modem	1	CRA Z KopyKat	9
Visual Information Presenter Pro	49	Microtech SolarPower solar panel	8	Cylos Smaller Installer	8
COMPUTERS & SYSTEM SOFTWARE		Qdea Synchronizer!, Update!	12	Dayna SafeDeposit & SafeDeposit Server	6
Apple Installer	8	PRINTERS & PRINTING TOOLS		Digital Eclipse DiskMaster	9
Apple Macintosh	34	5-D JAWS	30	Fifth Generation Public Utilities for Macintosh	41
Apple PowerBooks	110	Apple LaserWriter IIg & IIx, Personal LaserWriter NTR	3	Glen Canyon GCS Compressor/Installer	8
Apple PowerBook Duo	45	Apple LaserWriter Pro, LaserWriter Select	1	ICOM Simulations OnCue	41
Apple SANE (Standard Apple Numeric Environment)	52	Azalea UPCTools	9	Now Now Utilities	41
Apple System 7.1, WorldScript	1	Canon LBP-8 Mark IV printer	107	Symantec Norton Utilities for Macintosh	41
EO Personal Communicator	1	Emulex NETQue, NETJet	24	WORD PROCESSING & DOCUMENT TOOLS	
Microsoft Windows 3.1	34	Hewlett-Packard LaserJet 4	1	AStar VersionMaster 1.5	8
Taligent operating system, components	3	SuperMac ProofPositive Full-Page, ProofPositive Two-Page	6	JIAN Tools for Sales SafetyPlanBuilder	13
DATABASES		PROGRAMMING TOOLS		Microsoft Word 5.1	20
Brio DataPrism 2.0	24	Glen Canyon Script-Ease	8	Nisus Nisus Limited Flag Edition, and Complete Flag Edition	4
Macintosh Business Systems Feedback for 4th Dimension	12	REFERENCE WORKS & CD-ROMS		Shana Informed Foundation, SmartForm & TrueForm Translators, Informer Manager and Informed Designer	13
MapInfo MapInfo 2.0, MapBasic	4	Alpha Technologies ClipTime Volume II: American Media; Volume III: Hollywood Classics	30	TechWorks Spiral 1.0.1 note taker	42
GRAPHICS HARDWARE		Digital Gallery CD of 20 landscape, pastoral and cityscape images	30	WordPerfect WordPerfect	42
Integrated Device CZAR NuBus 25-MHz RISC coprocessor	28	GRAPHICS SOFTWARE		Working Software Word Services	55
YARC MacRageous II NuBus 40-MHz 29050 coprocessor card	28	Aldus Fetch 1.0 media cataloger	41		
		Microsoft PowerPoint 3.0 for the Mac	34		
		Storm PicturePress 2.5, QuickPress	44		

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Looking ahead



Issue date	Special section Product Watch	Close for Display ads, MarketCenter, Career Opportunities	Close for Ad Showcase
Feb 8	Graphics	Jan 28	Jan 26
Feb 15	GA Spec. Rpt. Modems	Feb 4	Feb 2
Feb 22	Presentations	Feb 11	Feb 9
March 1	Mapping software	Feb 18	Feb 16
March 8	GW Spec. Rpt. Database add-ons	Feb 25	Feb 23
March 15	Scanners	March 4	March 2
March 22	UPS hardware	March 11	March 9
March 29	Application development	March 18	March 16



Marveling at the mystery of our democracy and the magic of our technology is all well and good, but for those of us in this industry, both the mystery and the magic often are found where you least expect them. At least that's

how the Knife internalizes one of the more bizarre discoveries of recent months.

You do remember Microsoft, right? That's the little software company that could and did, in the process making Chairman Bill wealthy enough to be the subject of two

biographies, one authorized and one not. The company's motto seems to be "leave no microcomputer software market unmolested, or at least untouched." Microsoft has talked before about its interest in personal digital assistants. Now comes the Knife's report that

the company has definite plans to enter the nascent PDA market with a hardware device bearing its own label.

You can't have a PDA without an operating system, and the Knife's sources claim that Microsoft has eschewed MS-DOS and its graphical derivatives in favor of developing something completely different. These same sources also say Microsoft will depend on the manufacturing capabilities of the far side of the Pacific Rim to produce the MS-labeled product.

Apple apparently has very little reason yet to worry about Microsoft competition to the Newtons as Gates and company only caught on to the PDA market potential sometime after John Sculley started spreading the word.

Supply or demand? Apple has been the subject of more than a few casual cheap shots about its inability to meet demand for some of its more popular products. And at Apple, popularity equals PowerBooks.

Sources tell the Knife that one of the reasons that you can't get timely delivery of PowerBooks in any reasonable quantities is because demand is showing unpredictable strength and stamina. Although statistics can be manipulated to serve almost any purpose, the Knife was surprised to learn that demand is running at such a clip that by the end of the year, the installed base of PowerBooks should be more than 1 million.

The Knife points out that it would be a great deal more than an understatement to say that the lineup's two Duo sisters aren't contributing as much to this phenomenal success as some had projected.

Most blame this lackluster performance on the unavailability of an internal modem, a situation that was relieved only last week when the first Express Modems began to trickle out of Apple.

Since the first Apple MiniDocks also began to ship last week, Duo sales performance may improve soon. That assumes that the concept of docking is viable, which it probably is, Compaq's unfortunate experience notwithstanding. And remember, slow sales initially can be misleading. The LC family, for example, got off to a slow start but has now become one of the hottest selling members of the desktop Mac family.

Intelligent assistant. There's a long and proud history of Apple employees striking out on their own to establish a new venture based on a bright idea or two. One of the latest examples is RAE Technology Inc., which has what sounds like a bright idea indeed.

The Knife has heard that the new company is working on what you might think of as a software PDA for your PowerBook. According to the description, this "super PIM" is designed to help those legions of PowerBook road warriors manage those important pieces of information that are necessary to maintain a level of productivity sufficient to ensure the continuation of life as we know it. So, if you've been looking for a free-form object-based information manager handler than a couple of undocumented Peruvian aliens ... □

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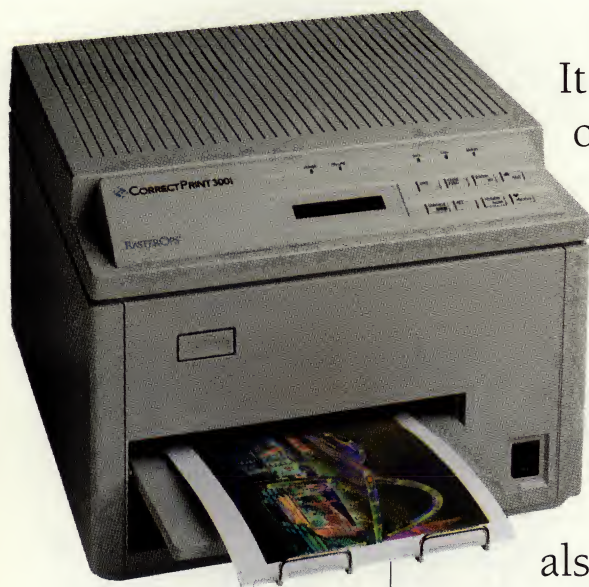
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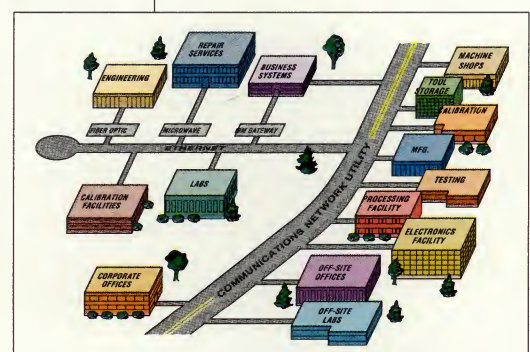
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